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Contra Costa County **DETENTION FACILITY**

February 1977

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ENVIRONMENTAL IMPACT REPORT

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DETENTION FACILITY

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Contra
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SUMMARY

The proposed Contra Costa County Detention Facility will house 383 inmates in a four story structure of 186,000 square feet of floor space. The Facility will have the necessary support functions to meet the detention needs of the County. A two court complex will be constructed as part of the project. In addition, site development will include utility relocation, street closure and/or diversion, removal of existing structures, storm drain and permanent parking construction, and site landscaping.

The proposed Facility is to be located in the County Civic Center in the City of Martinez. The project site is 7.5 acres bounded by Willow, Mellus, Court and Ward Streets. To assemble the site, six small blocks will be joined, several local street segments will be vacated, and a major thoroughfare (Pine Street) will be diverted one block to the west.

The proposed structure will have the following key elements: 1) the intake area (which includes alcohol recovery and pre-trial release unit), 2) the housing areas which include the medical area, 3) the central program areas, 4) the administration area, and 5) the support functions such as kitchen, laundry and mechanical and electrical areas. The courts complex (approximately 10,000 square feet) will include two courtrooms with their necessary support functions and will be an attached single story unit on the northwest side of the main facility.

Nine housing modules will contain up to 49 single cells per housing unit. These clusters will be in 2 story units (the upper being much like a mezzanine). Two corridor systems will separate prisoners and visitors. There is one large main courtyard, and each of the housing modules will have a separate courtyard of approximately 1,200 square feet. Women and men will be visually and physically separated and booked and released through separate areas. Religious, library, visiting and counseling areas will be provided. The Facility will meet State and Federal guidelines for local detention facilities.

The project, if approved, is estimated to be completed in 1979 and the project will cost approximately \$20 million.

Significant Impacts and Mitigation Measures

1. The proposed project creates the greatest physical impacts of the five Civic Center alternatives considered

Of the 4 sites and 5 alternative designs, the proposed project creates the most traffic, parking, noise, and air quality impacts (Sections 4 and 11, the numbers indicate the numerical designation for the subject - please consult the table of contents).

Mitigation Measure

The alternative selected was deemed the best when other impacts were considered. Social and economic factors and overall visual and land use factors were

analyzed and these considerations were felt to have a higher priority over the aggregated impacts of a physical nature. The individual physical impacts (traffic, parking, noise, and air quality) are generally not significant and many effects can be mitigated. The project as proposed will rectify the existing negative impacts of the present Main Jail, which has been considered a substandard facility for over a decade.

2. Loss of visual buffering from Civic Center

Construction of the project will require the removal of existing structures which currently "buffer" and visually reduce the obviousness of the Civic Center, primarily from the east and south (Sections 1, 2 and 9).

Mitigation Measure

The proposed design was recommended to reduce the above impacts (i.e., low height, closest proximity to existing government offices, retention of significant vegetation, extensive landscaping).

3. Reduction of "small town" appearance

The proposed structure is large and will contribute to the Civic Center's tendency to interject a "city" atmosphere. The reduced desirability of the eastern and southern areas for residential use as a result of this impact is possible (Sections 1, 2 and 9).

Mitigation Measure

As in number two above, the project design reduces much of the impact. The proposed Facility will not appear as a "jail" in many respects, and will not look like a massive single structure. Certain aspects of this impact are unavoidable.

4. High operational costs

As proposed, the project will cost approximately \$3.7 million annually to operate. This will be a significant impact upon the County's budget (Sections 1, 3 and 10).

Mitigation Measure

The proposed facility is a staff-intensive project (personnel salaries are 70% of operating costs). Reducing, whenever possible, the number of staff would lower the operational cost. More extensive energy and water conservation in the design will reduce the utility costs in future years as gas, oil, electricity, and other utilities become more expensive.

5. Increased traffic congestion will result from the project

Heavy congestion at the corner of Ward and Court Streets during the afternoon peak hour can be expected. The two main reasons being: 1) a major portion

of the proposed parking area on the site will exit on Ward Street, 2) existing stop controls at that intersection will slow traffic flow (other streets will have an increased traffic burden but no other significant impacts were identified. (Section 4)

Mitigation Measure

Traffic controls and workday management can reduce congestion. A four-way stop control would more evenly distribute the peak hour delay. The overall traffic and parking mitigation measures recommended are that the County encourage and expand staggered work hours for employees. These measures would also reduce the Ward and Court Street peak hour congestion impact. In addition, the County should initiate a comprehensive parking study.

6. The proposed project will use most of the remaining Civic Center area, leaving virtually no room for future expansion

The project as proposed (including parking) leaves little, if any, land specified in the 1963 Civic Center Plan for future development. This means that if County government is to expand in Martinez, more land will probably be required for either structures or parking. This assumes that the existing structures would remain. (Section 5)

Mitigation Measure

The Civic Center Plan could be revised to incorporate the addition of the Detention Facility and accommodate future County needs in the Civic Center. Formal arrangements between the County and the City of Martinez could be initiated to begin this process.

7. The proposed project will create significant construction noise and significant increase in traffic noise levels on Court Street (Sections 4 and 11)

Mitigation Measure

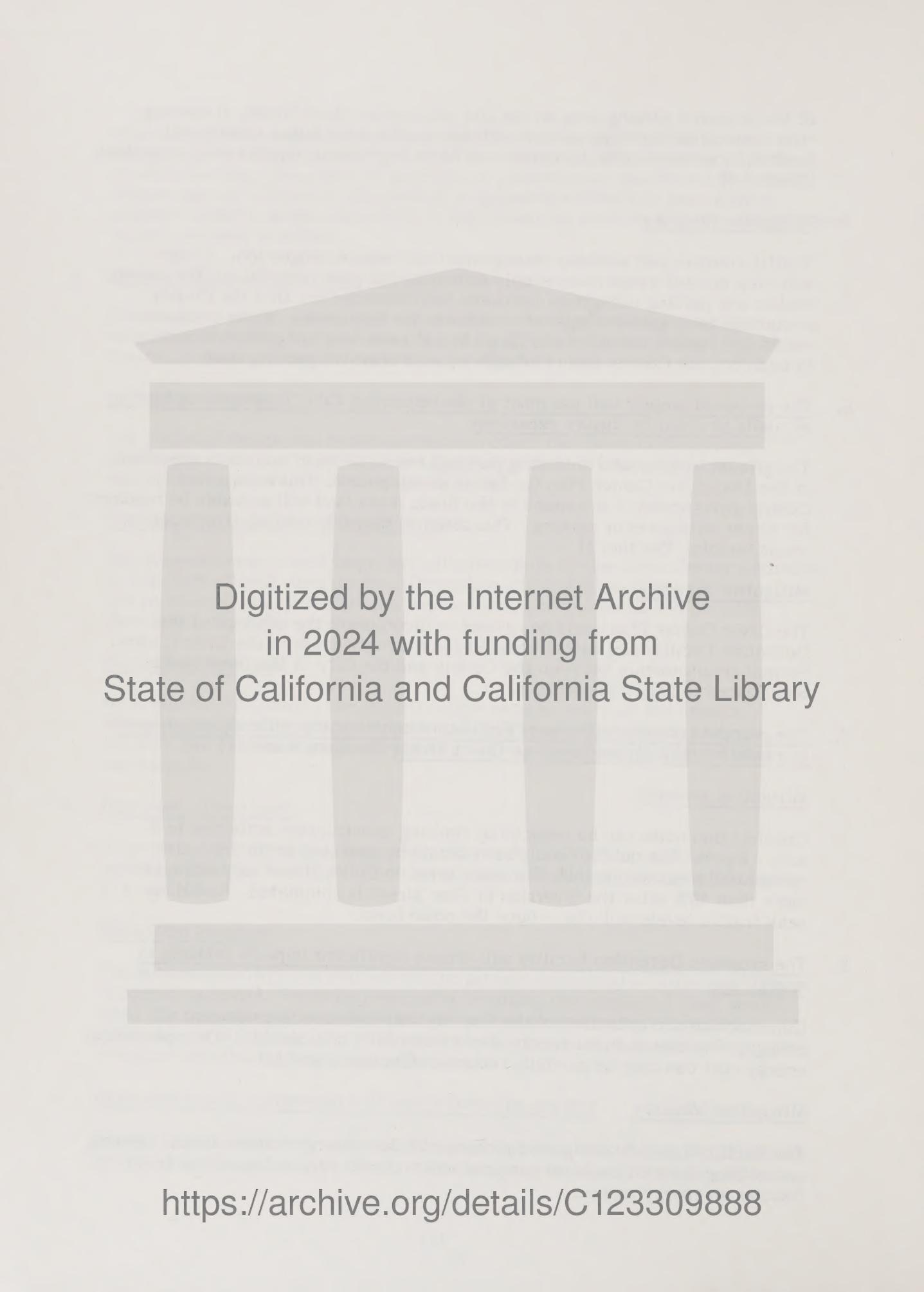
Construction noise can be reduced by limiting construction activities to 8 a.m. - 6 p.m. The noisiest equipment should be operated as far from the residential areas as possible. The noise level on Court Street may increase more than 50% after the diversion of Pine Street is completed. Reducing peak traffic levels will also reduce the noise level.

8. The proposed Detention Facility will create significant impacts relating to energy use

Construction and operation of the Facility will consume large amount of energy. The construction energy use is essentially unavoidable. The operational energy cost can only be partially reduced. (Section 3 and 13)

Mitigation Measure

The Facility could be designed for more efficient energy conservation. Heating and cooling systems could be designed which do not rely so heavily on fossil fuels as an energy source.



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I. Introductory Discussion

A. Project History and Description

The California Environmental Quality Act suggests the earliest possible preparation of an EIR for a project. This is desirable from the standpoint of identifying impacts early enough to develop meaningful and effective alternatives and mitigation measures. On the other hand, it may be difficult to evaluate some aspects of a project when they may not have been fully developed at the time the EIR is prepared. Many of the design aspects of the proposed Detention Facility remain amenable to alteration. Because of this, many mitigation measures identified in this document and others which may come to light during public review of the project may have an impact upon the final design of the project.

This EIR has been developed to aid the reader in understanding the salient points of the project and to accurately describe the impacts and mitigation measures. To this end, the Draft EIR was prepared subsequent to the development of a series of background studies. These studies are contained as chapters of the Detention Facility Background Report. Most of these chapters are technical and detailed - more than is required for the environmental analysis and more than is necessary to cover the required elements of an EIR as specified in the California Environmental Quality Act, its guidelines and the guidelines for Contra Costa County. The background chapters (24 in number) were prepared by County staff or consultants engaged to prepare certain specific subjects. These reports are available at the various County libraries, the County Public Works and Planning Departments and the Clerk of the Board of Supervisors. Individual copies may be purchased at cost through the Planning Department.

Each subject inventory, impact and mitigation measure section has a chapter number following its title referring to the chapter location in the Background Report. A list of chapters follows the index of figures at the front of this document. The Background Report subjects are discussed in this EIR but in lesser detail. The reader is encouraged to consult the Background Report for more detailed information on the several EIR subjects.

1. History of the Project

Part of Contra Costa County's existing main jail in Martinez was built in 1901 to house 50 prisoners. In 1944 the north wing was added to the jail.

In November of 1963 the County Board of Supervisors adopted the Civic Center Plan. Among numerous recommendations of this plan was the replacement of the 1901 main jail and its 1944 addition with a new facility.

Since the 1963 recommendation, there have been several attempts to construct a new detention facility. Foremost of the reasons to do so was the fact that the existing structure was inadequate from both capacity and function standpoints. Several Grand Jury reports, private citizens' organizations and State agencies have concurred in this opinion through the years.

The most recent proposal, prior to the present project, was for a "Criminal Justice Detention Center." This project was for a six-story, concrete, jail and courts building with a design capacity of 343 inmates. It became controversial for reasons that included its placement near residences, high structural costs, construction impacts, and non-conformance with some modern jail planning guidelines that were promulgated after it was designed. In 1975, opponents of the project were successful in an initiative to submit the matter to the electorate. The project was officially terminated February 3, 1976 by the Board of Supervisors.

At that point the present proposal was activated. An entirely different approach was developed. The Board selected a Detention Facility Advisory Committee (DFAC) to guide the development of the project which was now to be known as the Contra Costa County Detention Facility. The DFAC began functioning in March of 1976 under the chairmanship of Judge Coleman Fannin. The DFAC made recommendations to the Board of Supervisors for their consideration. Two early decisions were to build only one facility and to construct the facility in the County Civic Center in Martinez.

Three consulting firms were selected to carry out specific tasks under the direction of County staff. The architectural and engineering firm of Kaplan/McLaughlin, the programming firm of Facility Science Corporation and, the construction firm of Turner Construction Company were hired at the end of May, 1976 to apply their particular expertise to the proposed project.

The County staff and the consultants began meeting often with the DFAC for their input and to inform them of the progress of project development.

In July the Board ordered that the "Jail Initiative" be placed on the November ballot. The main thrust of this initiative was that a jail should not be built unless it met certain national guidelines. The County staff and consultants had been directed by the Board to plan the project to these guidelines. The initiative was defeated by the voters on November 2, 1976.

In September, 1976, the Board suggested that the detention facility planners develop a facility to house between 370 and 383 inmates.

In early November the DFAC recommended a project alternative that required a six-block site in the Civic Center and required the closure of several street segments. The Board concurred with this recommendation on November 9, 1976.

Schematic drawings of the proposed project were completed and presented to the Board at a public hearing on January 25, 1977. On February 1, the Board approved the schematic drawings and authorized the staff to proceed with the development of the proposed project. For a more detailed discussion of the historical aspects of the project see Chapter 3 of the Background Report.

2. Project Description (Background Report Chapter 2)

The overall goal of the proposed project is to provide a new detention facility to replace the existing inadequate County Main Jail structure located in downtown Martinez, to eliminate the need to house unsentenced prisoners at the County Branch Jail near Marsh Creek and to remove the need to house unsentenced prisoners in adjacent County jails such as Solano, San Francisco and Alameda Counties. The proposed facility will house all male and female unsentenced Contra Costa County prisoners. It will also house a limited number of male and female sentenced prisoners who, for a variety of reasons are not confined at the Marsh Creek Rehabilitation Center or in the Richmond Work Furlough Center. It will also accommodate a limited number of juvenile offenders if they are required by State law to be housed in the County jail instead of Juvenile Hall. The approach has been to plan and design a detention facility that reflects the most contemporary approaches to detention operational practice and physical design and which meet the particular criminal justice needs of Contra Costa County.

Implicit in the project design has been the careful consideration of the policies established by the Board of Supervisors, (recommendations made by the Detention Facility Advisory Committee (DFAC)), appropriate laws and codes, and applicable national standards and guidelines. The intent is to construct a detention facility which emphasizes dignity and individuality for each inmate in a humane and secure environment; an environment which is both economic to construct and efficient to operate. An extensive effort was made in the planning process to consider the implications of future changes in detention facility requirements and to assure that, as much as possible, the facility would be designed in a way to assure flexibility to meet future needs.

The objectives of the proposed project include:

- Construction of a 383 bed detention facility with necessary support functions within the Contra Costa County Civic Center which meets the detention needs of County residents and provides humane incarceration for those detained.

- Construction of a two court complex with necessary support functions adjacent to the detention facility with provision to accommodate a future addition of four or more courts at some time in the future. For the purposes of this EIR, a future four court addition will be assumed.
- Site development including:
 - utility relocation
 - street closure and/or diversion
 - existing buildings removal
 - storm drain construction
 - permanent parking construction
 - site landscaping
 - disposition of existing main jail

3. Project Purpose

California State Law (Section 26605 Government Code) requires that counties must provide detention facilities for sentenced prisoners, and for unSENTENCED individuals when incarceration is deemed necessary to ensure their appearance in a court of law. State law (Section 4004.5 Penal Code) also provides that other local law enforcement jurisdictions may provide similar facilities for the same purposes, i.e., cities within the County. In Contra Costa County, the Sheriff-Coroner's Department operates three detention facilities in compliance with the above laws. These are:

- (1) The main jail in downtown Martinez, which is utilized for males (principally unSENTENCED) and for females (both sentenced and unSENTENCED).
- (2) The Marsh Creek Rehabilitation Center for sentenced men and the adjacent branch jail which is a minimum security facility converted to medium security to house principally unSENTENCED males. (Subsequent to a January, 1977 Court decision, the Branch Jail now houses only sentenced male inmates, while all unSENTENCED males are held in the Main Jail.)
- (3) The Richmond Work Furlough Center which is designed for male sentenced inmates, but also temporarily houses sentenced female inmates.

In addition, there are eight other law enforcement jurisdictions (cities) which operate detention facilities within the County. These facilities, in general, are for short-term incarceration (not more than 72 hours) with the Sheriff receiving custody of all individuals for longer term incarceration following initial court appearances. These facilities are described in more detail in Chapter 23 of the Background Report, Criminal Justice Facilities. Any law enforcement agency operating in Contra Costa County may deliver individuals to the custody of the Sheriff upon initial arrest. These include:

the California Highway Patrol, the Federal Bureau of Investigation, the Bay Area Rapid Transit District, the East Bay Regional Park District, and local jurisdictions (e.g., cities) with or without detention facilities.

The principal purpose, therefore, of the detention facility will be to house in a secure environment, all unsentenced males and females prior to their release or trial. It will also include housing for inmate workers (trustys), and for sentenced females and males who for some reason cannot be housed in one of the other detention facilities within the County.

Included within the proposed complex are two courts. These two courts will augment the existing courts in the Civic Center. One is planned to serve as a Municipal Court, the other as a Superior Court. Their use will be primarily dedicated to criminal actions although they will also accommodate civil actions.

4. Project Location and Boundary

The proposed detention facility will be located in the County Civic Center area of the City of Martinez. (See Chapter 1 of the Background Report for an in-depth discussion of this subject.)

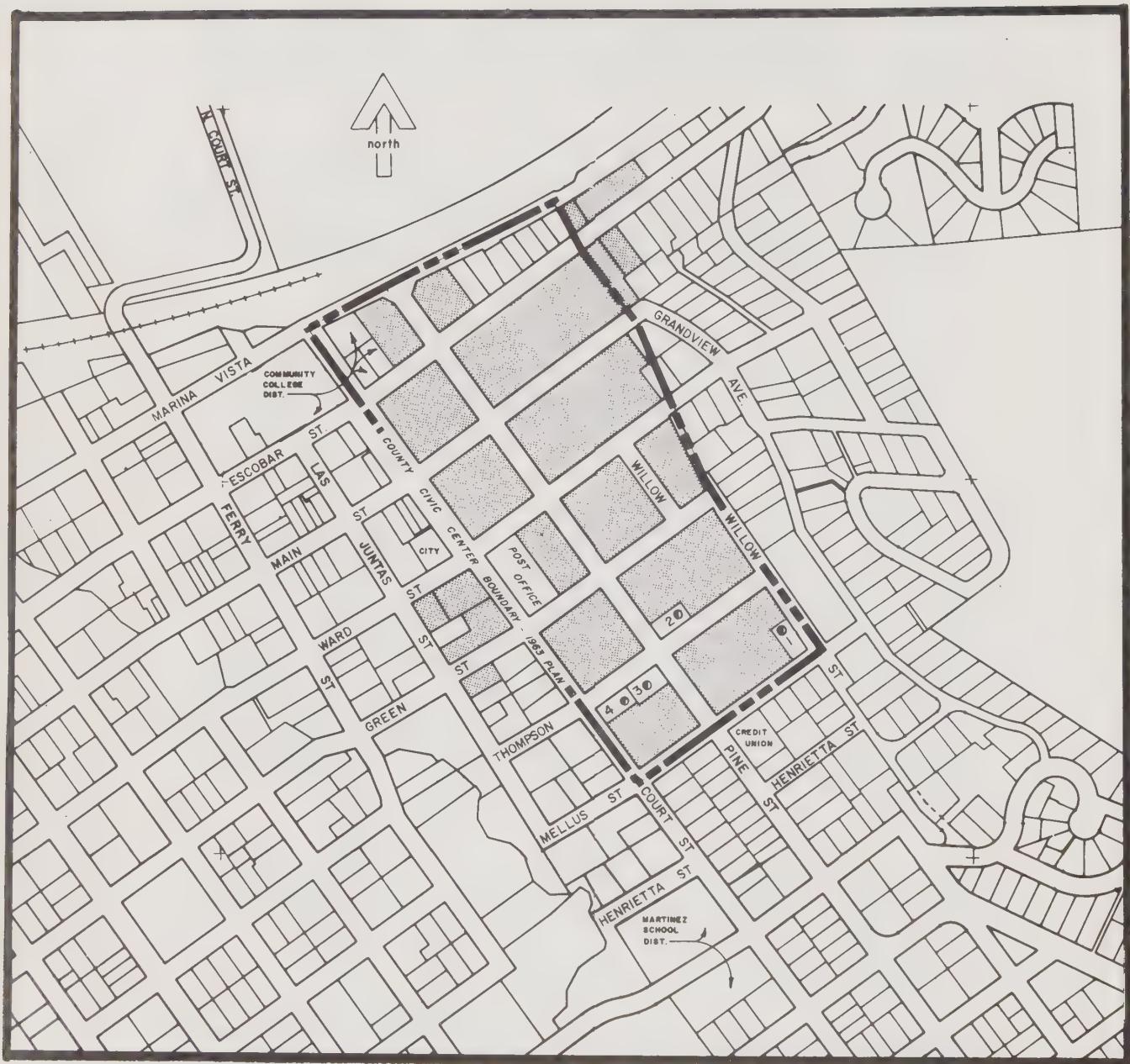
The Civic Center boundaries are shown in Figure 1. The total proposed site is approximately 7.5 acres in size. The County owns the bulk of the property and is in the process of acquiring four remaining privately owned parcels. These parcels are depicted in Figure 1. Parcel 1 is a private residence. Parcel 2 and Parcels 3 and 4 are doctor's offices.

The location of the detention facility is shown in Figure 2 which also shows that the development of the project site involves a restructuring of the existing on-site street network and parking facilities within the project area.

5. Proposed Structure

In general, the proposed detention facility project will include two distinct but connected elements. The major element is the Detention Facility with an area totalling approximately 176,000 square feet, including outdoor courtyards. It will have 383 beds and will include those functions and activities necessary to receive, process and release those individuals detained. The key elements of the detention facility portion are 1) the intake area (which includes alcohol recovery and the pre-trial release unit), 2) the housing areas which include the medical area, 3) the central program areas, 4) the administration area, 5) and the support functions such as kitchen, laundry and mechanical/electrical areas. The courts complex is a second portion of the structure with an area totalling approximately 10,000 square feet. The court complex is designed as an integral portion

Figure 1



County-owned property



Under negotiation for
county acquisition

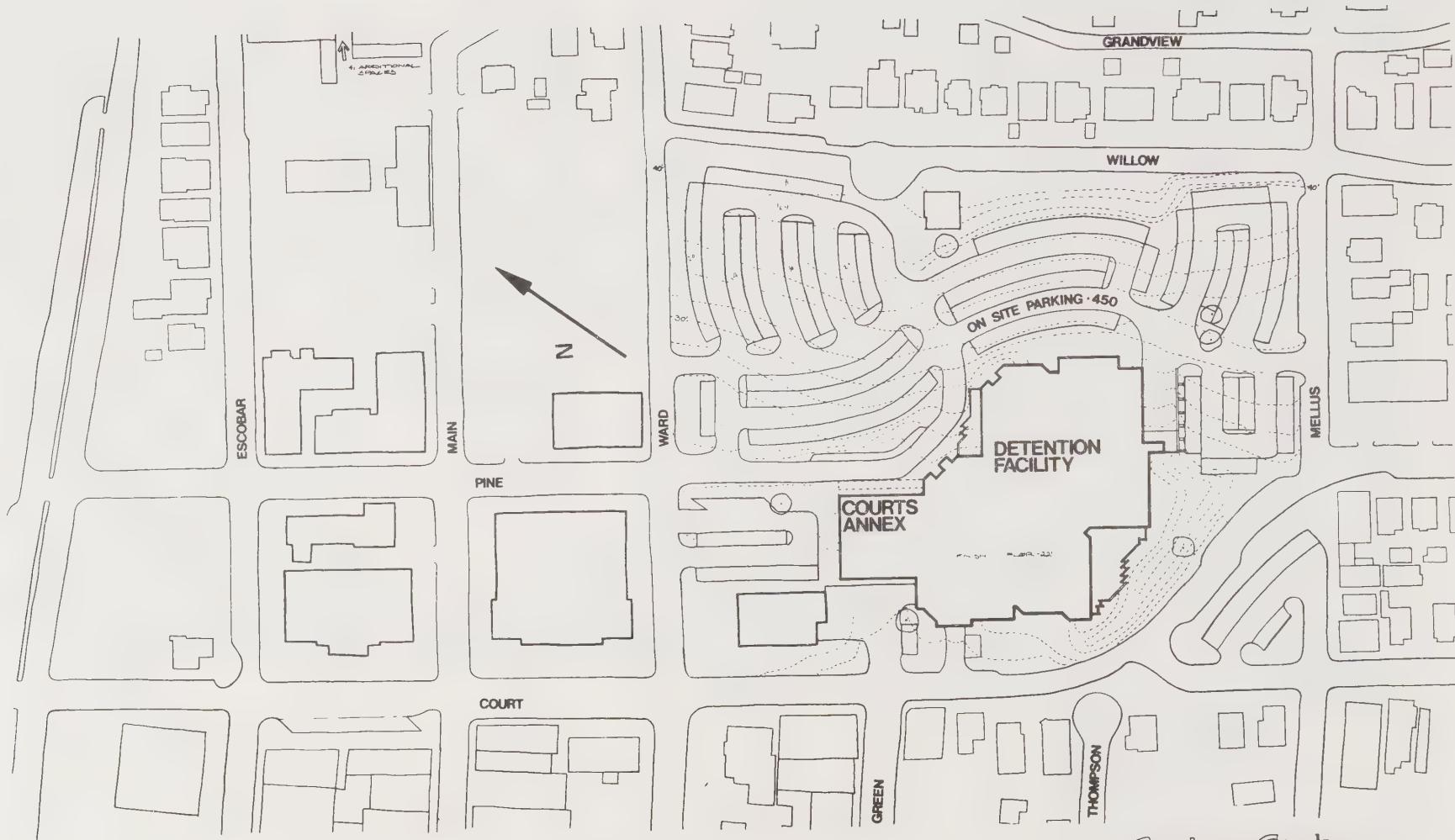
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1000 Feet

CONTRA COSTA COUNTY
DETENTION FACILITY

Public Land Ownership

Figure 2
Site Plan



Contra Costa
Detention Facility

Topon/McLaughlin Schematic Revision
2066
January 20, 1977 Scale 1"=45' North
Site Plan

of the structure and it will include two court rooms with their necessary support functions. The total floor area of the proposed facility is 186,000 square feet. Revisions have occurred after review of the project design by the Detention Facility Advisory Committee (DFAC) and County staff. A generally accurate detailed description of the function and nature of the areas within the facility is contained in the Detention Facility Service Program, Contra Costa County, Facility Sciences Corporation, Beverly Hills, California, December 10, 1976 (referred to as the Service Program). The key space elements of the Service Program are presented in this chapter. For a more detailed description, the reader should refer to the Service Program itself which is available in the County libraries. The building is proposed to accommodate the functions specified in the Service Program as shown in Figure 3 through Figure 11. These figures depict the Detention Facility at the completion of schematic design. Some revision of the building as shown can be expected during final design, but the proposed Facility will be essentially as shown. It can be seen by the figures, that it is a complex building with a variety of structural elements. Its form is largely determined by the housing clusters of single cells grouped around a common day room with adjacent exercise courtyards. With the exception of possible rooftop mechanical rooms, it will be approximately 38-40 feet high and cover an area of approximately 74,000 square feet. The structure is planned to be of both reinforced and precast concrete. The following briefly describes the floor level layout:

- The two court complex is proposed as a single story element on the north-west side of the structure (adjacent to the existing Post Office).
- The Detention Facility portion of the structure is organized on two main floors, Level 1 and Level 2. These two levels contain the major inmate and staff activities and their circulation system. The building, therefore, will appear as a four story building, but it will be functionally organized on two major levels.
- Each level is further subdivided into a second floor, Level 1a and Level 2a. In the housing clusters, Levels 1a and 2a are similar to mezzanines.
- Level 1a contains the major visitor circulation, counseling or office areas, and some inmate housing.
- Level 2a contains the upper portion of the Level 2 inmate housing.

The final building exterior is under development. Figure 3 and Figure 4 depict two alternative designs for the treatment of the building exterior, but the structure is planned to be of both reinforced and precast concrete.

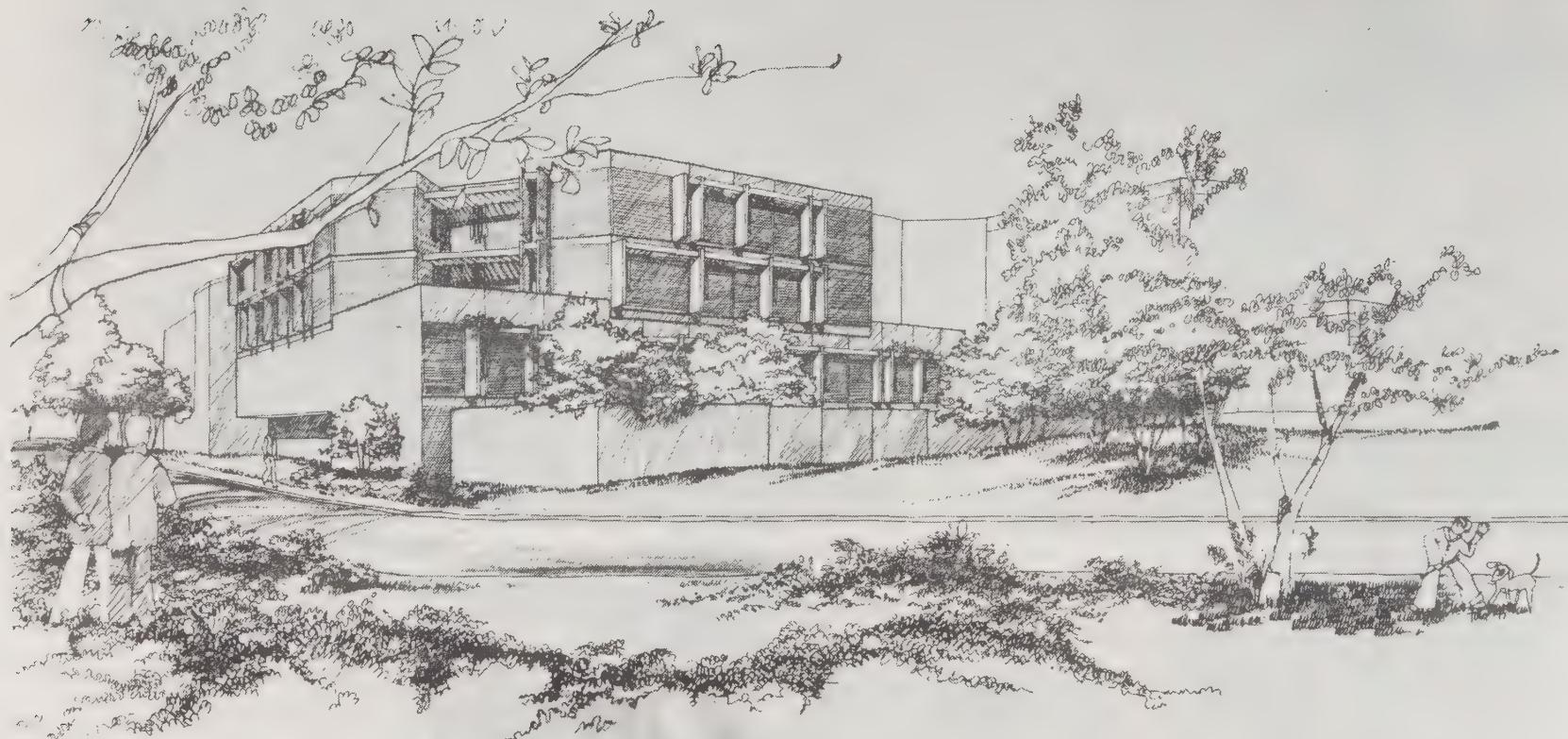
Figure 3
View From Pine Street Diverson
Scheme A



Contra Costa
Detention Facility
Logan / McLaughlin Schematic Design
SF 63 January 20, 1977

View From Pine St. Diversion

Figure 4
View from Pine Street Diversion
Scheme B



Contra Costa
Detention Facility

Rocky McLaughlin Schematic Design
JF 81
January 20, 1977

View From Pine St. Diversion

Figure 5
Building Model

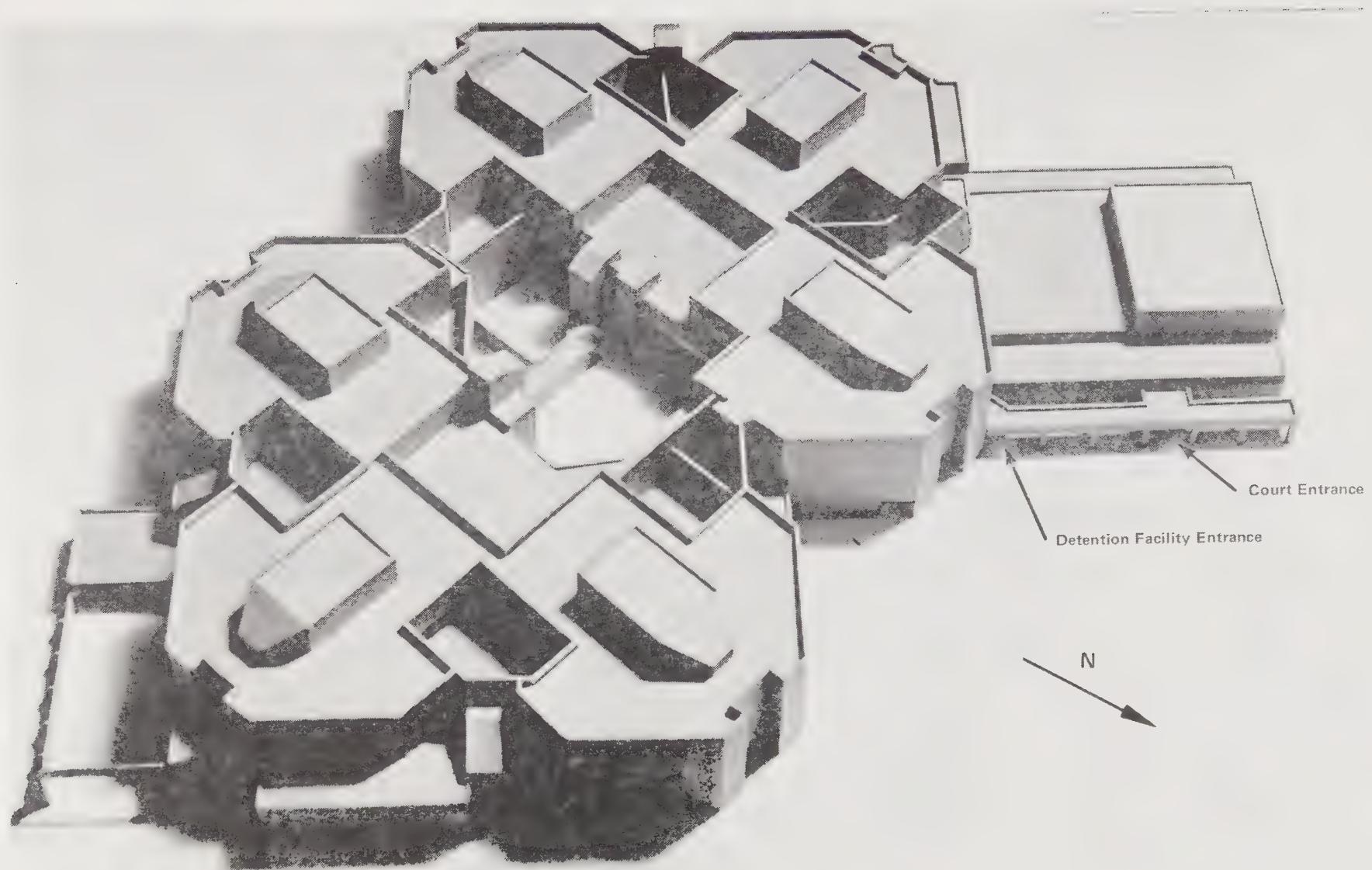


Figure 6
Plan - Level 1

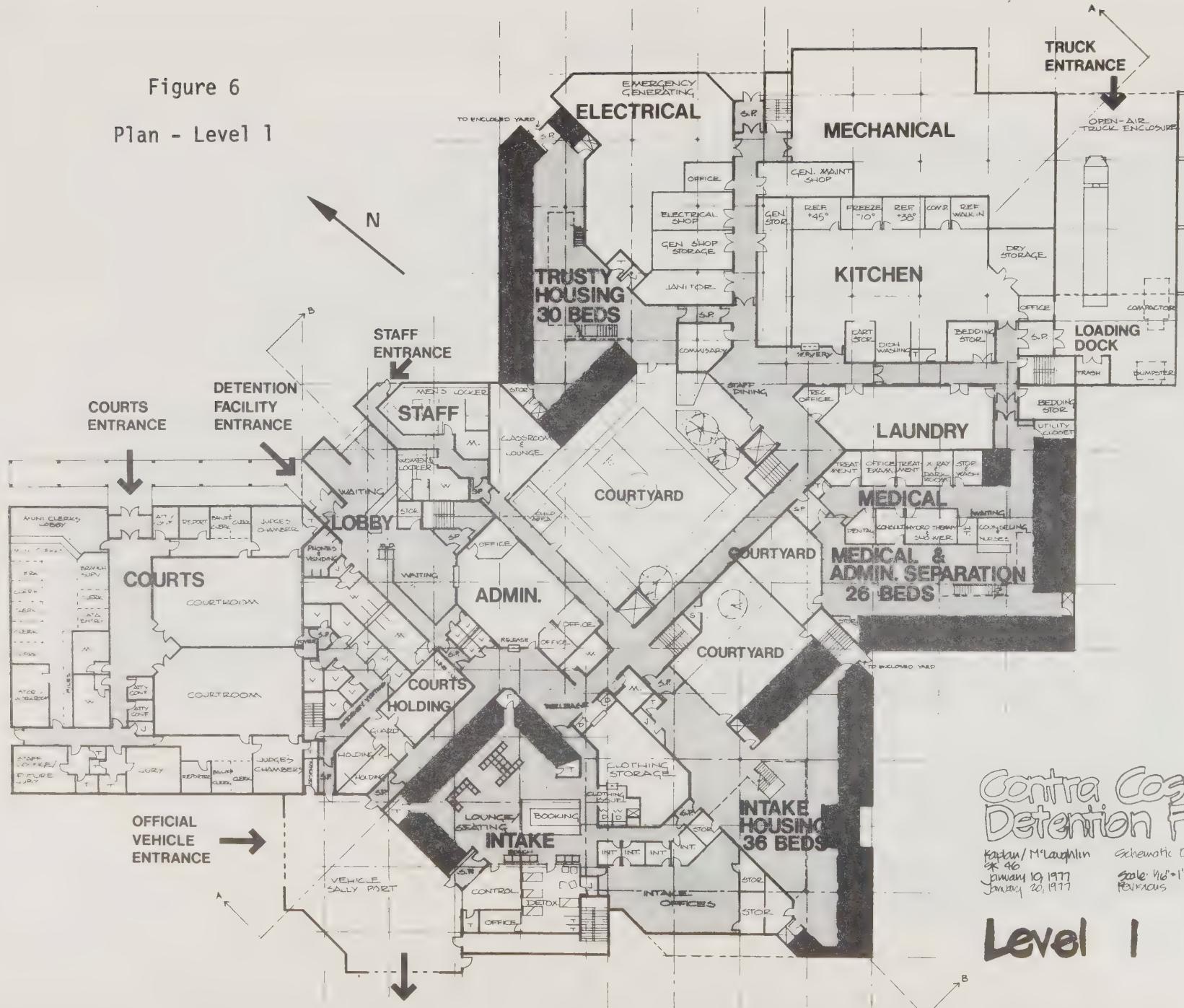
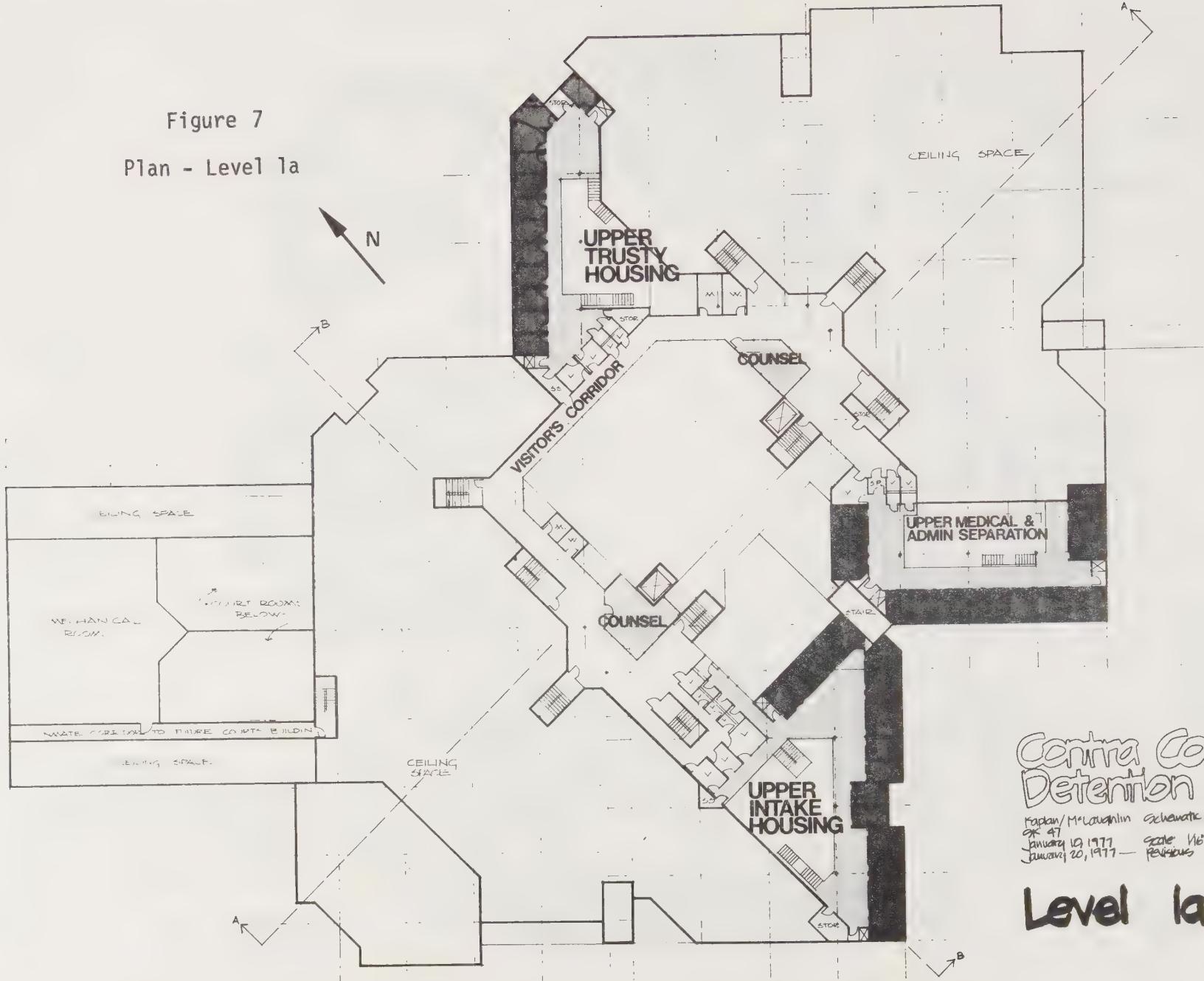


Figure 7
Plan - Level 1a



Contra Costa Detention Facility

Kaplan/McLaughlin Schematic Design
9/ 4/ 71
January 10, 1977 Scale 1/6 = 1'-0"
January 20, 1977 - Revision

North

Level 1a

Figure 8
Plan - Level 2

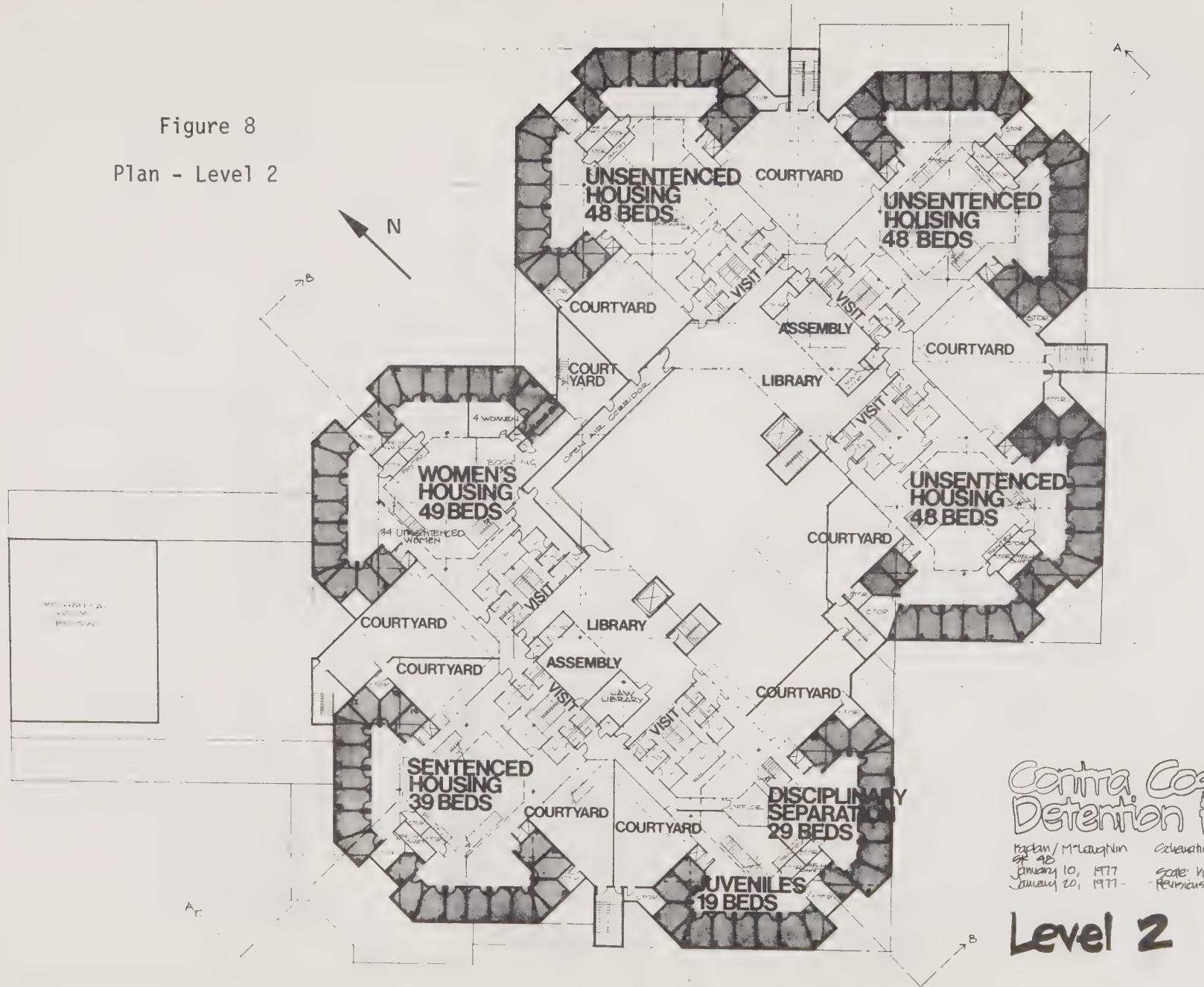


Figure 9
Plan - Level 2a

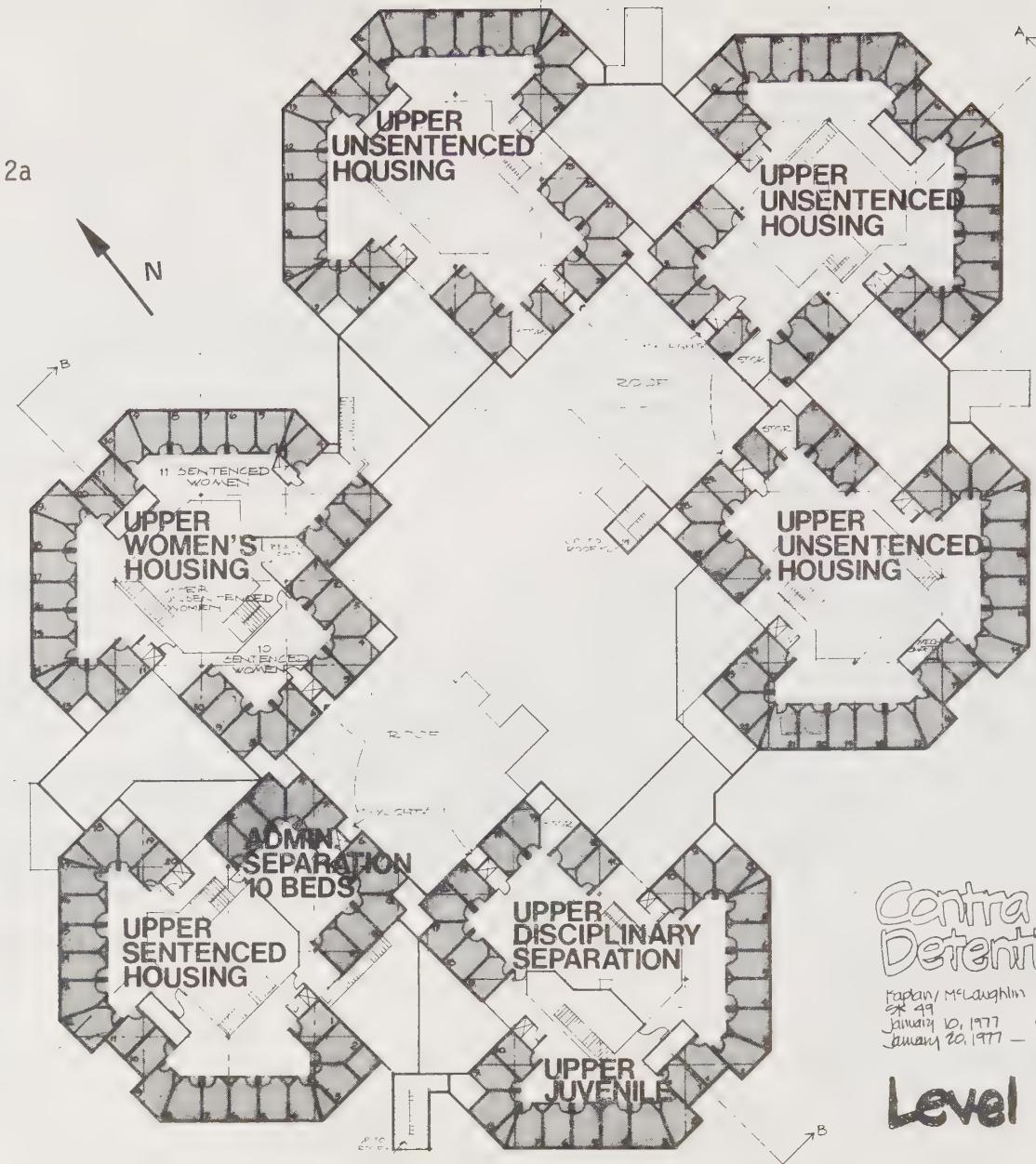
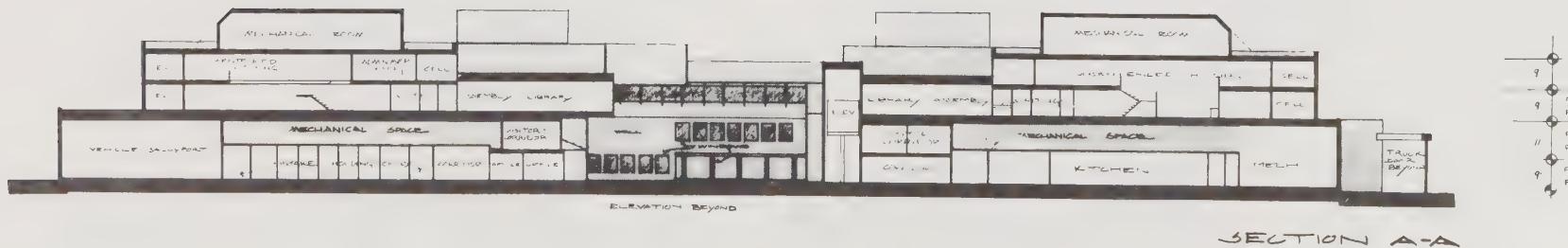
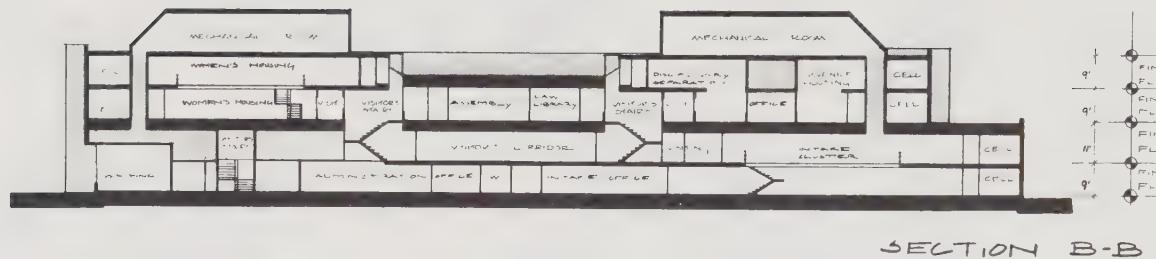


Figure 10
Building Section



Contra Costa
Detention Facility
Rapp/McLaughlin
SK-53
January 11, 1977
January 20, 1977
Schematic Design
scale 1/8=1'-0" R North
Revisions

Figure 11
View of Central Courtyard



Contra Costa
Detention Facility

Logan/McLaughlin Schematic Design
January 20, 1977

View of Central Courtyard

Figure 5 is a photograph of a model of the facility depicting general building massing. Windows and exterior details are not shown but the variation of the building forms and the courtyard exercise spaces can be seen.

Figures 6-9 show floor plans for Level 1, 1a, 2, 2a, respectively, at the completion of schematic design.

Figure 10 depicts two typical sections through the facility.

Figure 11 shows a perspective view of the large central outdoor courtyard. This courtyard is also shown in the center of the building in Figure 5. The main courtyard, together with the smaller courts adjacent to the housing clusters, provides natural light to the interior of the building and ready access to outdoor exercise and fresh air for the inmates.

Two separate corridor systems will be maintained to separate visitors and inmates within the facility. The visitor corridor will begin at the administration area and extend to each housing cluster visitation area. The inmate corridor system will be enclosed entirely within the facility perimeter security system to permit inmate and staff movement without restricting visitor movement.

6. Detention Facility - Levels 1 and 1a

As shown in Figure 6, Level 1 has approximately 64,000 square feet, excluding the two courts and their support facilities. It contains the major activities of intake, release, administration, medical, medical and administrative separation housing, intake housing, male trusty housing, and facility support activities such as kitchen, laundry, mechanical and electrical equipment.

As shown in Figure 7, Level 1a has approximately 17,000 square feet. It includes the upper levels of the intake, trusty and medical housing clusters, visitation areas for these clusters, administrative area for counselors and volunteer coordinators, visitor corridors and mechanical equipment spaces. The functions performed on these levels include:

- a. Vehicle Entry - a vehicular sally-port for loading and unloading prisoners for transport to and from the detention facility by vehicle.
- b. Intake/Release - this includes those activities required to process prisoners for holding or release and includes space for the booking procedures, release procedures, interviews by the pre-trial release unit, short term holding areas, and personal clothing exchange and storage. (The booking area is programmed initially for men who constitute the highest volume, but would accommodate the booking of men or women. Booking for women will occur on Level 2 near the women's housing area.)

- c. Central Control - a secure area which operates and monitors the electronic surveillance and locking systems within the facility.
- d. Alcohol Recovery - this area contains holding for intoxicated drivers detained in the Facility until sober or released to a third party.
- e. Medical - includes staff offices, exam, treatment room, dental, x-ray, storage and visitation.
- f. Housing - All residential areas will have single occupancy rooms clustered around common multipurpose space for dining and programs with an adjacent outdoor exercise area. A toilet and lavatory is included in each room. Showers will be in the common area or shared by the entire unit. Each cluster will include space for a staff office, staff toilet, food service, pantry, telephones and visiting (both contact and non-contact). Housing in each module will be arranged in two levels with approximately one-half of the rooms on the main floor, (see Figures 6 and 7). Each room will have a window and direct access to an outdoor exercise area. Trusty housing will serve the male inmate workers. Intake housing will serve new male inmates until classification is completed. Medical and administrative separation will serve as a medical recovery area and also as a separation area for those who cannot be placed in a normal housing cluster.

Level 1 and 1a housing is 92 beds and includes:

<u>Designation</u>	<u>Capacity</u>
Medical	26 beds
New Intake	36 beds
Trusty	30 beds

- g. Program - the areas include offices for volunteer groups, program staff, and a chaplain.
- h. Administration - includes space for public reception, administrative office space, inmate records, office machine equipment, staff lounge/classroom, and staff lockers.
- i. Kitchen - the kitchen will contain space for the preparation of food for all dining areas within the detention facility. This area will include dry storage, walk-in refrigerator and freezer, dishwashing area, cart and tray storage, food preparation, staff offices, miscellaneous storage areas, and waste separation and disposal.

- j. Laundry, Housekeeping, and Maintenance - this area will contain laundry facilities for all of the Sheriff's correctional needs including washing and drying, dry cleaning, clothing storage and wrapping. Janitorial and maintenance areas will be provided.
- k. Mechanical/Electrical - this space will contain heating, air conditioning and ventilation equipment, electrical panels, primary telephone and communications service and repair areas for the facility.
- l. Main Outdoor Courtyard and Exercise Areas - these areas provide exercise for the trusty housing, medical housing and intake housing units. They also provide light into the interior areas of the detention facility and can provide a place of refuge for inmates during an emergency such as fire.
- m. Court Assembly - used for holding prisoners in preparation for movement to court both inside and outside the Civic Center and for prior to their return to housing from court.

7. Detention Facility - Levels 2 and 2a

Level 2, approximately 55,000 square feet, contains a mixture of male and female housing clusters, and female booking. Male and female areas will be separated physically and visually. Level 2a, approximately 34,000 square feet, contains the upper levels of these housing areas.

- a. Booking (female) - Booking will occupy an area within the female housing module and will include space for records, clothing change, medical evaluation, counseling, and general storage.
- b. Housing - Housing areas will function as previously described under Level 1 and 1a housing. The upper level housing areas will include the following cluster on Levels 2 and 2a.

<u>Designation</u>	<u>Capacity</u>
Women - unsentenced	34 beds
Women - sentenced	11 beds
Women - juvenile	4 beds
Male - unsentenced	48 beds
Male - unsentenced	48 beds
Male - unsentenced	48 beds
Male - sentenced	39 beds
Male - juvenile	19 beds
Male - administration separation	10 beds
Male - disciplinary separation	29 beds

- c. Program - Multiuse space for classroom, workroom, counseling, religious, recreation with ready access by inmates. These functions will occupy approximately 2,400 square feet. (Office and storage space for volunteers and counseling staff on Level 1a.)
- d. Outdoor Recreation - Outdoor courtyard recreation areas of approximately 1,200 square feet are located adjacent to each housing cluster for immediate access by the inmates. Each area is enclosed within the building walls, with limited or no visual access to the surrounding neighborhood.
- e. Library - This space totals approximately 1,600 square feet, including both a general and a law library, and can be used as a "program" area when required.

8. Courts

The court area of about 10,000 square feet is located on Level 1. It is proposed to have one Municipal and one Superior courtroom with the necessary support areas including Judge's chambers, jury deliberation room, conference room, and space for the Municipal Court clerk. The only access between this area and the detention facility will be the connection of the two lobby areas and the connection with the inmate circulation system. Separate circulation systems are provided for judges, inmates, and the public. The courts will be designed to accommodate an addition of four courts at a future date. The future courts would be primarily for the Superior Court.

9. Interior Treatment of Detention Facility

As stated by Kaplan/McLaughlin, project architects, security and control have by tradition been dominant features of detention facilities. Some believe this emphasis has increased social alienation and anti-social behavior of those detained within these facilities. A relatively recent response to this concern has been to design jail facilities to hold people more humanely, reduce sensory deprivation and to support an individualized approach to behavior change. Some architectural characteristics frequently used to describe such facilities are that they be inviting to community accessibility; have unobtrusive security features; and that they be smaller facilities more within the scale of spaces found in residential structures.

The facility should ease communication and development of interpersonal relationships and provide opportunities for physical recreation and activity to avoid frustration and boredom which is often a cause of disorder and violence between inmates. These worthwhile aims frequently conflict with the continued necessity for security with operational efficiencies of some aspects of larger, more centralized facilities and with a desire for easy, economical maintenance

that often results in hard institutional physical settings. These objectives may also be in conflict with the viewpoint of some community residents who may view, with alarm, what appears to them to be an expensive, luxurious facility. The architect's solution for the interior of the building that responds to these divergent criteria must consider the activity patterns, interactions, expectations and images and values of those within the facility, both the inmate, staff member and the visitor. The intent of this Facility is to provide what is perceived to be closer to a normal environment which includes privacy, choice, informality and control - to develop a relatively non-institutional appearance and feeling. This will be accomplished by 1) reducing the scale of the open areas to that more normally encountered in a residential area; 2) by introducing natural light through use of relatively large window areas; 3) by selecting interior building materials which are durable but which also offer variety of textures and appearances; 4) by creating a variety of space elements within the housing and program areas; 5) by varying the size of the activity areas. Chapter 20 of the Background Report, Visual Analysis, discusses this subject at length.

The intent, therefore, is to create an environment which will possibly counteract the effects of boredom and anxiety.

While many of these goals are met by the variation of spaces depicted in the schematic drawings, many details remain to be resolved during the final building design.

It is anticipated that most wall surfaces will be concrete or concrete block. Floor finishes will be vinyl asbestos tile with some areas using commercial carpeting. Furnishings will be generally movable. Doors will be solid panel wood or steel with view panels. All materials will be chosen following a color scheme designed to reduce the institutional appearance of the facility and to maximize efficient lighting.

10. Site Development

Site development includes the removal of existing buildings from the project site, closure of streets, the construction of the Pine Street diversion, the relocation of utilities, construction of storm drainage facilities, construction of permanent parking and the development of temporary parking as needed during construction, both on and off site.

a. Removal of Existing Buildings

There are 20 primary buildings existing on the project site. These include 18 residences, some of which have been converted to County office use, and two doctors' office buildings. These buildings and associated improvements will be demolished and County departments functioning in them will be relocated.

b. Street Closure and Diversion

The site plan shown in Figure 2 requires the consolidation of the six-block area into one construction site and necessitates closure, abandonment and obliteration of some street segments. These portions are:

- 1) Pine Street between Ward Street and Mellus Street;
- 2) Thompson Street between Willow Street and Court Street;
- 3) Green Street between Willow Street and Court Street;

Although it is currently in use as a public street, Willow Street between Green Street and Ward Street has already been formally abandoned. It will also be closed and obliterated.

The following street reconstructions will be made:

- 1) Pine Street will be diverted at Mellus Street to intercept Court Street at Thompson Street.
- 2) Willow Street will either be extended from Green Street to Ward Street on an alignment and width comparable with that between Green Street and Mellus Street, or reconstructed to a cul-de-sac in the vicinity of Green Street.
- 3) Court Street will be reconstructed to intercept the Pine Street diversion.
- 4) Mellus Street will be reconstructed as a cul-de-sac with its entrance from Court Street and its terminus near its existing intersection with Pine Street.
- 5) Thompson Street will be reconstructed as a cul-de-sac with its entrance from Las Juntas Street and its terminus near its existing intersection with Court Street.

The diversion of Pine Street necessitates some modification in existing street profiles of Court Street to improve sight distance and public safety. Street widths may be increased on portions of Ward, Mellus, and Court Streets.

c. Utility Relocation

Pine Street is a major route for utilities which serve the City of Martinez and Port Costa. The construction of the Detention Facility across Pine Street necessitates the relocation of these utilities. Several alternatives to relocation were considered and some were found to be less satisfactory and more expensive than others. Utilities currently existing in the project area

are 1) water; 2) sewer; 3) gas; 4) telephone; 5) cable TV; 6) storm drain; 7) fire alarm, and 8) electricity. These utilities will be relocated following the alignment of the Pine Street diversion. After utility relocation, the existing lines will either be abandoned or removed.

The reconstruction of the intersection at Court Street and Ward Street to improve the traffic sight distance on Court Street will necessitate the lowering of a main telephone cable.

The closure of Thompson Street and Green Street will necessitate the rerouting of existing sewer, gas, water, electricity, telephone, and television lines. This subject is discussed in more detail in the Utilities section of this document.

d. Storm Drainage

The disruption of the existing surface drainage system and the need to remove site runoff from the project area requires that a storm drain be constructed. Preliminary studies indicate that a 30 to 36 inch diameter pipe running northerly along Pine Street from the project site would be adequate to meet the needs of the proposed project, the Civic Center, and the hillside area to the east. Its terminus would connect to an existing drainage line on the south side of Marina Vista.

An alternate method to meet the storm drainage need would be to increase the size of existing storm drains in either Mellus or Green Streets and divert all site drainage in that direction. This would also require a 30 to 36 inch pipe.

The best alternative storm drain alignment will be developed in conjunction with the City of Martinez during final project design. The Hydrology section of this report discusses the proposed storm drain system and the alternatives in greater detail.

e. Parking

The construction of the Detention Facility should satisfy three goals:

- 1) Off-street parking removed by the Detention Facility should be replaced.
- 2) On-street parking removed by the closure of existing streets should be replaced.
- 3) The parking needs of the new facility should be met.

Additionally, it would be desirable to create additional parking within the Civic Center.

The extent to which these goals can be met is currently under study. As shown in Figure 2, Kaplan and McLaughlin recommends parking on the site to be limited to about 450 parking spaces. Additional parking on-street and off-street will also be developed.

This scheme results in the first three goals above being nearly satisfied. They can be fully satisfied if the parking areas are developed with the parking density currently in use today, but this appears to develop inadequate landscaping. Parking is discussed in greater detail in the Traffic and Parking section of this report. Civic Center parking is currently under detailed study. It appears that more efficient use of existing space could yield a greater parking capacity within the Civic Center and surrounding business areas.

f. Landscaping

As shown in Figure 4, the Detention Facility will include landscaping around the Facility itself and in all parking areas. The landscaping shown is conceptual and precedes actual design. The precise nature and extent of the landscaping for the project has not yet been determined. It is apparent, however, that the degree of landscaping has an impact upon the number of parking spaces that can be provided.

The final landscaping solution, therefore, will be a compromise between the need for parking and the need for landscaping, and will take into consideration the significant trees identified in the Vegetation and Wildlife Impacts section of this report.

11. Construction Activity

During the construction period of approximately 2 years, an estimated average 70 plus workers will be on-site daily with possibly as many as 150 workers on-site during certain phases of the project. Normal work hours for most of the workers will be probably from 7:30 a.m. to 4:45 p.m. The exact hours will be established by agreement with the County and the contractor to minimize where possible, adverse construction impacts.

County office hours are from 8:00 a.m. to 5:00 p.m. During periods when courts are in session, it may be necessary to curtail certain construction activities creating abnormal noise levels. Work hours or days may be altered in order to minimize interference with court proceedings.

12. Energy Consumption Characteristics

The precise energy consumption characteristics of the facility have not yet been determined. Firm estimates of energy consumption will be developed during life cycle cost analyses when the construction drawings are prepared.

The primary sources of energy under consideration for the Detention Facility are: 1) natural gas, 2) fuel oil, 3) electricity, and 4) solar energy (see the Utilities and Community Facilities section of this report).

a. Natural Gas

Natural gas consumption for new facilities is currently regulated by the California Public Utilities Commission (CPUC). Because of the energy consumed by a facility of this size, it is unlikely that natural gas will be used for heating the Detention Facility. It will most likely be reserved for use in the cooking and laundry areas, and for backup to the proposed solar water heating facilities.

b. Fuel Oil

It is proposed that fuel oil may be the primary energy source for heating the building. If this option is utilized, it is estimated that the facility will consume approximately 131,300 gallons per year based on initial estimates.

c. Electricity

Electrical resistance heating will probably not be used as a primary heating source within the detention facility because CPUC regulations allow a maximum of 10% electrical resistance heating. Energy consumption for the remainder of the functions within the detention facility other than heating is estimated to be 6,582,000 kwh (i.e., fan motors, pumps, electrical switching, and lighting).

d. Solar Energy

It is unlikely that solar energy will be a primary source of energy for the detention system. It appears at this time not to be an economical solution for supplying the project's heating requirements although it will probably provide a significant amount of heating for domestic water. The extent to which solar energy is used within the project is currently unresolved and it will be a subject of future consideration during the design process.

It should be recognized that energy consumption and alternative energy sources have become very important in the first months of 1977 and may receive accelerated attention in the months to come. The Energy section of this report presents more information on energy usage and alternatives.

13. Facility Staffing

The Service Program (p. VIII-4) estimates the Facility to require a total staffing of 134 positions. In general, 43 positions will be

required to man fixed security posts including central control and each housing cluster; 21 positions will be required for administrative and services functions, including facility supervisors, program coordinators, receptionists and clerks. The facility will require 50 staff positions for roving posts such as shift supervisors, booking staff and other correctional staff. This is a total Sheriff's staff of 114 positions or a ratio of 1 staff member to 3.4 inmates.

In addition to those positions, staff is required from agencies other than the Sheriff's Department. The Probation Department will staff the pre-trial release unit which will require 7 positions. The Public Works Department Buildings and Grounds Division will furnish 2 maintenance staff. County Hospital will furnish the following individuals for medical services: 5 nurses, 5 medics, and a part time doctor and dentist.

Total staffing for this facility as proposed in the Service Program by Facility Sciences Corporation is 134 positions or a ratio of 1 staff member to 2.9 inmates.

14. Inmate Capacity

The Board of Supervisors established an inmate capacity of 370 to 383 beds. The Facility as proposed contains 383 beds. The 370-383 bed range was selected considering the population projections made by Facility Sciences Corporation, the Detention Facility Advisory Committee and a consideration of national standards. This figure represents the peak daily population which FSC expects to be reached in 1985 if existing release policies are continued. If these projections remains valid and if there is no significant increase in the release rates, it is anticipated that additional detention facilities would be required in the 1985-1990 period. Facility Sciences Corporation recommended that these additional facilities would be for sentenced persons requiring medium or maximum security housing. Additional space for unsentenced inmates could also be generated if the unsentenced inmate workers are utilized within the facility, or if the juvenile component is not utilized. The FSC population projections are shown in Table 1.

Table 2 shows how the 383 beds are allocated within the facility. There are nine separate housing clusters with the clusters ranging in size from 26 for the medical unit to 48 or 49 for several other clusters.

Projections by FSC (Service Program, pps. 11-22) indicate that the average length of stay in the facility is 6.6 days. This indicates very high turnover of incarcerated individuals.

Further discussion of capacity is presented in Chapter 5 of the Background Report, Inmate Capacity and in the Service Program.

TABLE 1
INMATE POPULATION PROJECTIONS

<u>Average Daily Population</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
Unsentenced	219	251	285	318	352
Juveniles	13	15	17	19	21
Sentenced	37	43	49	54	60
Trusties	<u>24</u>	<u>27</u>	<u>31</u>	<u>35</u>	<u>38</u>
Total	293	336	382	426	471

Peak Daily Population

Unsentenced	255	292	333	371	411
Juveniles	15	17	19	21	24
Sentenced	41	47	54	59	66
Trusties	<u>24</u>	<u>27</u>	<u>31</u>	<u>35</u>	<u>38</u>
Total	335	383	437	486	539

Source: Facility Sciences Corporation

TABLE 2
INMATE HOUSING CLUSTERS

<u>Womens Housing</u>	<u>Sub Unit Size</u>	<u>Cluster Size</u>
Unsentenced	34	
Sentenced	11	
Juvenile & Disciplinary	<u>4</u>	
Sub Total		49
<u>Male Housing</u>		
Unsentenced		48
Unsentenced		48
Unsentenced		48
Sentenced	39	
Administrative Separation	<u>10</u>	
Sub Total		49
Disciplinary Separation	29	
Juvenile	<u>19</u>	
Sub Total		48
<u>Intake Housing</u>		36
<u>Trusty</u>		30
<u>Medical and Administrative Separation</u>		<u>26</u>
Total		383 beds

Source: Kaplan/McLaughlin

15. Construction Costs

The current construction costs estimate for the project based on initial schematic design is \$17,087,000, including contingencies. Total project cost is \$19,950,000. This is a preliminary estimate based upon schematic design, and includes an inflation factor of 4%/year. Construction bids will be requested from qualified contractors as soon as possible to minimize the effects of inflation and to provide the Facility at the earliest possible date. Cost estimates will be revised and updated periodically until all bids are received on the project.

The source of funds for construction are as follows:

- a. General Property Taxes - \$5,150,000
- b. Federal Revenue Sharing - \$14,800,000

16. Furnishing and Equipment Cost

An initial cost estimate for movable furnishings and equipment for the Contra Costa County Detention Facility was made by Facility Sciences Corporation. This estimate of \$696,000 will be refined as the specifications are written for the purchase of furnishings. Funds for the acquisition of furnishings for the facility have not been allocated by the Board of Supervisors at the present time. It is anticipated they will be included in the County budget for the fiscal year 1978-79.

17. Source of Operating Funds

Money required to pay the expenses of operating the new Detention Facility will come from current general tax revenues via budget appropriations by the Board of Supervisors. This is the same procedure that is presently followed with respect to existing jail facilities. The Economics section of this report discusses this subject in more detail.

18. Disposition of Existing Detention Facilities

It is anticipated that neither the branch jail nor the present main jail in Martinez will be utilized to detain unsentenced prisoners following the opening of the new Detention Facility. The present main jail is physically inadequate to continue housing prisoners. The branch jail was established as a temporary measure to relieve overcrowding of the Martinez facility. It is the intention of the Sheriff-Coroner to return the building being used to house the branch jail near Clayton to a minimum security dormitory for sentenced men as was its original design purpose. As yet no decision has been reached for disposition of the present main jail. Kaplan and McLaughlin, project architects, have stated that the existing main jail is unsuitable for housing inmates. It is possible, but expensive, to convert the

existing main jail to other purposes which are as yet undetermined. It appears at this time that the best course of action would be to demolish the 1944 addition to the main jail, leaving that space for a central plaza. The remaining original 1901 structure could be renovated to accommodate an administrative function.

No firm decision on future usage has been reached at this time except that the main jail will not be used to house any prisoners and the branch jail will not be used to accommodate unsentenced prisoners. These issues are discussed at length in the Alternatives section of the Impact Analysis.

19. Civic Center Planning

The Detention Facility project is being developed in the context of the County Civic Center area delineated in the County's 1963 Civic Center Plan.

That plan also proposed the closing of Pine Street and the diversion of the Pacheco Boulevard-Pine Street thoroughfare to Court Street to create a large site area for public buildings, which is an essential feature of the Detention Facility project.

The project, however, will absorb most of the land indicated in the plan for Civic Center use because it requires a larger detention/courts building than originally was anticipated. This has the effect of making the plan obsolete for future decisions, and indicates that a new plan should be prepared.

The relationship between the Detention Facility project and government plans is discussed in greater detail in the Plans and Policies section of this Environmental Impact Report.

B. Environmental Inventory

1. Physical Description (Background Report Chapter 20)

a. Topography and General Appearance

The older part of the town of Martinez is clearly defined by its natural setting. Wooded hills along the east and west boundaries, the Franklin and Martinez ridges to the south, Carquinez Strait and the waterfront along the north compose the small valley in which the main town lies. The valley is traversed southeast to northwest by Alhambra Creek. These natural features give Martinez a distinct form. The primary entrances to Martinez are Alhambra Avenue, Pine Street and Pacheco Boulevard from the south, and two scenic waterfront drives, Carquinez Scenic Drive from the west, and Marina Vista from the east.

The entrances are enclosed by hilly topography, barring premature views of the town center, and emphasizing a distinct urban form once the town is visible. The most visually dramatic approach to Martinez is from Carquinez Scenic Drive. The descent from the hills along Carquinez Strait suddenly reveals the town. From Alhambra Avenue, because of the approach through lower elevations, the town is revealed gradually. However, a gateway effect is still strong because of enclosing hills and vegetation. Within the town itself, the road pattern is generally rectilinear, with gridpatterned streets oriented to the waterfront.

The waterfront is a primary natural resource area with marshes and wetlands, and when developed as a city and regional park, will provide an even stronger edge to the town's northern boundary.

Natural features and road patterns which give Martinez its form are mapped in Figure 12.

The historic growth pattern of Martinez is clearly discernible from its form. The oldest part of the city is centered near the waterfront, in the middle of the valley, recalling the once important role of the port. The downtown business district and the residential areas immediately surrounding it are finely grained, with small structures (1-2 stories in height) of various styles and ages, facing streets on the northwest-southwest grid pattern. Most of the roadways downtown are 35' wide, although residential streets are often narrower.

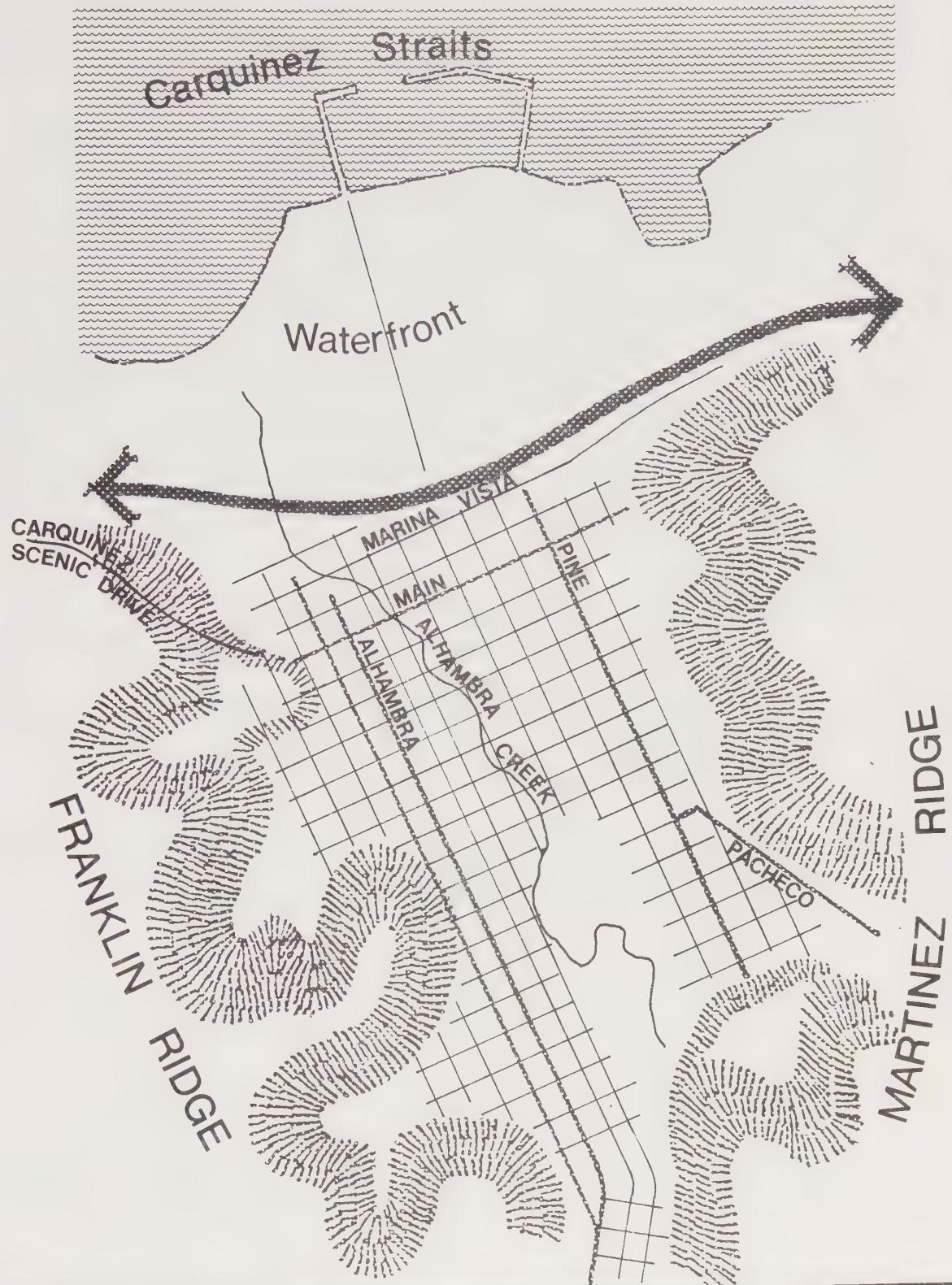


FIGURE 12
Natural Features and Street Pattern

The main downtown streets afford open views of the strait; cross streets have the hills as backdrop. Residential areas climb halfway up the hills on each side of the town center, to elevations of 100' on east and to 200' on the west. In the middle of the old town center, the County Civic Center buildings are located on six blocks, with the vertical tower of the County Administration Building a dominant focal point. Further south along the main approach roads, Alhambra Avenue and Pacheco Boulevard, newer residential areas and commercial development present a looser structure, often with curvilinear streets. The town throughout is heavily planted with deciduous shade trees along the streets. Beyond the natural valley of the town center, post-World War II housing developments occur which are within the city limits of Martinez but are visually differentiated from the town proper.

b. Viewshed

The viewshed, that area from which the site is constantly or intermittently visible, includes the residential hill area to the east of the site, the Civic Center, and an irregular portion of the downtown and residential areas to the west and south. The site is either not visible from areas outside of the viewshed, or so infrequently or remotely visible, that those areas are not included in the viewshed. From some localized areas within the viewshed, the site is not visible, and from some it is only partially visible. For example, from the second stories of some homes on the east hill, portions of the site may be visible, but from ground level, vegetation or houses obscure the view.

The four areas within the viewshed are the East Hillside, the South, Downtown, and the County area. East Hillside includes areas on the hill east of the site which have constant or seasonal views of the site. The South area is composed of residences and some office space, and is contiguous with the site on one boundary, and follows Alhambra Creek on the other. The Downtown includes only that portion of the central business district which has views of the site. The County area includes county buildings which have views of the site from ground level and/or upper stories.

The visual impact of the site on the four areas is ranked according to the degree and frequency of visibility. Vulnerability to visual impact is characterized as high, moderate and low.

- i. East Hillside. The site is most visible from the East Hillside area because of the rising elevations. Although views of the site are generally restricted from streets, which are often lined with trees, homeowner plantings, and two-story homes, views from second stories and sometimes ground level of the homes often include a major portion of the site. Resident population of the East Hillside area is estimated at 230.
- ii. County. The County area includes the Administration Building which has a restricted view of the site due to lack of windows on the south side, the northwing of the Administration Building with partial views from the fourth and fifth floors, and three and four-story County offices, and the Courthouse from which the site is partially visible. Views from most of the County buildings are limited by siting or absence of windows. County office employees total 1700. Pedestrians within the County area who would be affected by site views for short periods of time reach a maximum of 185 at Pine and Main at noontime (January, 1977 traffic data).
- iii. Downtown. The Downtown area has a limited area from which the site is visible, but also has the largest number of viewers, thereby increasing frequency of visibility. Beyond Ferry Street, the site is obscured by buildings.

The Downtown resident population was estimated by the County's 1975 Special Census at 144, excluding Detention Facility inmates. Traffic counts indicate that traffic on typical downtown streets within the viewshed averages about 1900 ADT, although Pine Street, which is a major entrance to the Civic Center, totalled 4300 average daily in-coming vehicles for January, 1977. Number of motorists, based on an average car occupancy of 1.5 persons per vehicle, would approximate 3000 for downtown streets, and 6450 for Pine Street.

- iv. South. From the South area, views of the site are most restricted, except, as mentioned above, for those homes and offices bordering the site. The level topography, dense vegetation and low resident density make this area the least affected visually by views of the site. Approximate resident population is 120, and office population is approximately 50.

c. Climate

Martinez enjoys a relatively mild Mediterranean type climate. This means that the winters are cool (infrequent frosts) and the summers are warm (few days approaching 100° F.). The majority of the ± 20 inches of rainfall comes during the winter months.

2. Existing Use and Surrounding Area (Background Report Chapter 18)

The proposed Detention Facility is to be built in the County Civic Center area of the City of Martinez. Since both the Civic Center and the surrounding locations are developed, the Detention Facility will have an impact on existing buildings and land use in the area. The purpose of this section is to describe the patterns of development in the areas surrounding the proposed Detention Facility site, thereby providing a context for the impact evaluations presented in this report. (See Figure 13.)

a. Present Use of the Civic Center

As defined by the 1963 Contra Costa County Civic Center Plan (see Plans and Policies section of this report), the Civic Center is bounded to the north by Marina Vista; to the west by Court Street; to the south by Mellus Street; and to the east by Willow Street. The area encompasses approximately 22 acres in the northeast section of the City of Martinez; the proposed Detention Facility is to be built within this Civic Center area.

Land use within the Civic Center boundaries is comprised of public buildings, parking lots, medical offices, streets, and a few residences. The land surface in this area is relatively flat. With the exceptions of Marina Vista, Escobar, and Willow Streets, roads are laid out in a grid pattern with most roadways being 35 feet in width.

The County buildings located within the Civic Center area are: the Administration Building - North Wing, the 12 story Administration Building, the County Finance Building, the present Main Jail, the Court House, and the Public Health Building. These buildings are all encompassed within the area bounded by Escobar, Willow, Ward and Court Streets.

Of the buildings in downtown Martinez, these County buildings are presently the largest. The Administration Building is the dominant structure. The other County buildings are of a more moderate size but are still larger than other buildings in the land use survey area with the exception of the George R. Gordon Education Center which is 6 stories; the Public Health Building and the Finance Building have 3 stories and the Court House has 4 stories.

The exterior condition of these County buildings is very good to excellent. The buildings are of more recent construction than those in the Central Business District (CBD) with the exception of the Finance Building. The Finance Building constructed of granite and the Court House constructed of stone are substantial buildings with columns on their front facades similar to many government buildings throughout

Figure 13
Existing Land Use



Source: Contra Costa County Planning Department

the United States. The Administration Building and the Public Health Building are relatively modern structures, constructed in 1963-64 and 1957 respectively, and reflect newer architectural trends and newer building materials. The result of the differences in architecture and building materials for the major County buildings is a lack of architectural continuity.

Land uses within the Civic Center also include the U. S. Post Office on Court Street; the Martinez Historical Society Museum which is a renovated circa 1880 residence, at the northeast corner of Court and Escobar Streets; medical offices; and single and multiple family residential structures. Some of the residential units house several County departments which will be relocated elsewhere.

b. Land Use Fronting the Civic Center

Land uses located a block or more away from the Civic Center boundaries are buffered to some extent by development. But land uses fronting the Civic Center are, or will be, directly exposed to the Civic Center and the activities carried on there, including associated traffic. Consequently, the land uses fronting the Civic Center are of particular importance.

North of the Civic Center is a narrow strip of property, between the Southern Pacific Railroad tracks and Marina Vista, used for public and County employee parking. Also to the north is the waterfront regional park under development by the East Bay Regional Park District and the City of Martinez. These areas view, primarily the Administration Building North Wing, the Administration Building, the Main Jail, and the County Finance Building.

To the west of the Civic Center boundary on Court Street are a variety of land uses; from south to north along Court Street the land uses are: 1) between Mellus and Thompson Streets - a law office in a refurbished single family residence; two single family residences, one of which is on the corner parcel; 2) between Thompson and Green Streets - a multiple family structure consisting of 8 units, a single family residence, a duplex, and a certified public accountant's office in a two-story refurbished building; 3) between Green and Ward Streets - the County Assessor's Office and the County Veteran's Service Department; 4) between Ward and Main Streets - a branch County library and the County Probation Department which is in a remodeled building; 5) between Main and Escobar Streets - a vacant two-story building undergoing remodeling and the County Public Defender's Office; and 6) between Escobar Street and Marina Vista - the George R. Gordon Education Center, and parking lots. The Civic Center is clearly visible from all these land uses fronting on Court Street.

At the southwest corner of Willow and Mellus Streets is a church; on the southeast corner of Pine and Mellus Streets are three single family residences and the County Credit Union. From these buildings

only the top of the Administration Building is visible due to existing structures on the block bounded by Pine, Mellus, Willow, and Thompson Streets. West of Pine Street are two multiple family residences consisting of four and three units respectively and two single family residences. A law office is located on the southwest corner of Mellus and Court Streets; it is a relatively new structure. The structures west of Pine Street and the law office have a clear view of the Civic Center because the block opposite Mellus Street, at Court and Pine Streets, is presently undeveloped.

Fronting the Civic Center from the east are, primarily, single family residences. Residences have been constructed at varying elevations well above Willow Street due to the sloping hillside and consequently have an unobstructed view of the Civic Center. Access to these residences is presently via several streets including Main, Ward, Willow Streets and Grandview Avenue.

c. Land Use Outside the Civic Center Boundaries

The land use survey area outside the Civic Center boundaries will be examined on a geographic basis and will, within each geographic area, describe 1) general land uses, 2) government/government-related land uses, and 3) undeveloped land and vacant building spaces.

i. Land Use North of Civic Center. The land use north of the Civic Center boundary - Marina Vista - is devoted to limited commercial, light industrial, and recreational purposes. Included in this area are the Southern Pacific Railroad tracks and the waterfront area. Located in the waterfront area are: a fire apparatus company; a utility service yard; several large buildings which once constituted a cannery; ball fields; a horseback riding area; boat repair, reconstruction, and launching facilities; a tackle shop; a restaurant; and parking area.

A large portion of the land in this area remains vacant. A joint effort between the East Bay Regional Park District and the City of Martinez is underway to develop the land for a regional waterfront park. The City of Martinez has already developed the marina.

ii. Land Use West of Civic Center. The land use survey area to the west of the Civic Center boundary - Court Street - includes a mixture of residential, commercial, office, and government/government-related land uses. The area encompasses land use from Court Street west to Castro Street and is bounded on the north by Marina Vista and the south by the portion of Brown Street which is west of Pacheco Boulevard.

Single family residences exist, primarily, south of Susana Street. Multiple family residences predominate in the residential areas north of Susana Street (77% of the dwelling units in Block Group 1 - Census Tract

3160), although a few single family units are present. Multiple family units are primarily concentrated in two areas: 1) the area bounded by Las Juntas, Green, Estudillo, and Henrietta Streets and 2) the area adjacent to the Martinez Intermediate School bounded by Arreba, Estudillo, and Brown Streets. This second area consists of buildings more recently constructed. Parcels in the residential areas are highly varied in size and shape, with some having more than one residential structure.

Also included in the area near Susana Street are the Martinez Elementary and Intermediate Schools, the Susana Street Park (City), and several churches.

Retail and service businesses, as well as offices, are concentrated in the area bounded by the Southern Pacific Railroad tracks to the north and by Green Street to the south. This CBD, as defined by the 1973 Central Martinez General Plan Business Analysis, extends, beyond the boundary of the land use survey area, west to Berrellessa Avenue. In addition, the perimeter of the CBD is characterized by light industrial, storage, office, and "dilapidated" residential uses. Industrial operations in the northwest corner of the CBD generate heavy diesel truck traffic on Berrellessa Avenue, Alhambra Avenue, Escobar Street, and Marina Vista.

While a limited amount of housing exists in the CBD, this area primarily affords a range of shopping opportunities including general merchandise; apparel; furniture; specialty retail shops; convenience shopping such as food, drugs, and liquor; restaurants; auto repair, and auto parts shops; warehouses; and other services. In addition to the shopping services there is a complement of financial institutions, banking services, law offices, real estate offices, bail bonding, newspaper offices, County offices and notary publics.

Most buildings in the CBD are old; many are two stories and several are three stories. The buildings fronting Main Street vary significantly in height, size, and appearance; some have been substantially remodeled to accommodate offices or other businesses; the exteriors and facades of other buildings have been modernized, thereby accentuating the variety of styles and appearances. The size of some buildings fronting Main Street have also been somewhat reduced due to two or more retail or commercial tenants occupying a single building.

The County has not constructed any major building in the land use survey area since the Administration Building was built in 1963-64. The County Civic Center Plan called for the construction of a new Detention Facility, followed by an addition to the Administration Building and a second County office building. The County, due to the postponement of the Detention Facility, has leased office space in downtown Martinez and in other areas of the County. The leased office space in the Martinez CBD includes the following County departments:

Clerk-Recorder, Auditor-Controller, Elections, Social Services, Human Resources Agency, Assessor, District Attorney, Public Administrator, and the Probation Department.

The County has, for these offices, taken over entire buildings or building space in or near the CBD extending south to Mellus Street. The total amount of office space leased by the County within the land use survey area increased from 5,000 square feet, in 1967, to 65,000 square feet in August, 1976; the majority of the leased space is west of the Civic Center boundary. In some instances the County has remodeled vacant buildings to accommodate County offices.

At present, two bail bond businesses are located west of the Civic Center in the block bounded by Court, Main, Las Justas, and Escobar Streets. A review of the telephone directory for Central Contra Costa County reveals 28 attorneys listed with offices in Martinez, primarily located in the area west of Court Street; several of these attorneys were listed as specializing in criminal law.

A survey of vacant buildings in the CBD was conducted in September, 1976 for those buildings displaying for sale, rent and/or lease signs. A follow-up telephone survey of owners/real estate agents was made; the telephone survey results indicated that over 15,000 square feet of building space was available in the CBD.

On Main Street the vacant space was confined to three buildings, representing 5,300 square feet. At the time of the survey, two buildings had been vacant for 6 months, while the third had been vacant for approximately 1 year.

Vacant buildings were also located on the side streets Castro, Las Juntas, and Ferry; the available space totaled approximately 9,000 square feet. One owner indicated an additional 2,700 square feet would become available in the future. The maximum length of time in which space remained vacant on these streets was approximately 1 year. Another vacant building was located at the corner of Ferry and Escobar Streets and was available for lease at the time of the survey.

iii. Land Use South of Civic Center. The land use survey area to the south of the Civic Center boundary - Mellus Street - is comprised of diverse residential structures. The area encompasses land use from Mellus Street south to Brown Street and is bounded by Court Street on the west and Willow Street and Pacheco Boulevard on the east.

The land surface in this area is flat or moderately sloping. Streets are laid out in a grid pattern with most blocks being square in shape. The exception to the grid pattern is Pacheco Boulevard which is at a diagonal to the other streets. Most roadways in this area are less than 35 feet in width.

Single family residences are the dominant land use in this area although several two family or multiple family structures are present. Most

multiple family structures are located on corner lots (see Figure 13). Most single family structures have one story while multiple family structures have two or more stories. These single and multiple family units are mostly decades old; most are well-kept and in good condition though a few are poorly maintained units.

The non-residential uses in this area south of the Civic Center boundary are concentrated along Pine Street and Pacheco Boulevard. Pacheco Boulevard, which leads into Pine Street, is one of three main access routes to the CBD and, consequently, is heavily travelled. Included among the non-residential uses along Pine Street are restaurants, a grocery store, the County Employees' Credit Union, and various offices. The California Department of Motor Vehicles is located one block off Pacheco Boulevard, on Haven Street. West of Pacheco Boulevard are: 1) Ricks Park (City) between Arreba and Brown Streets, and 2) churches at the intersections of Mellus and Willow Streets and of Susana and Court Streets.

iv. Land Use East of Civic Center. The land use to the east of the Civic Center encompasses the area on the hillside between Willow Street and the Shell Oil Refinery storage tanks which are on the ridge-line of the hill. This area is bounded on the north by Marina Vista and extends south to the portion of Brown Street which is east of Pacheco Boulevard.

The hillside has substantially influenced the development in this area. Streets are narrow and curvilinear; residences are several stories high to accommodate the hillside and have been constructed at different elevations. The area, consequently, has a three-dimensional quality which is accentuated by tall, mature trees. The hillside, with the trees and multi-story residences of varying age and individual designs, gives the area a Mediterranean character.

Access to residences on Grandview Avenue, Highland Avenue, Merrithew Drive, Huntington Court, and Lafayette Street is provided by Ward Street. Access to Willow Street - the Civic Center east boundary - is provided by Green, Thompson, and Mellus Streets. Access to the residences southeast of the Civic Center boundaries is provided by Susana and Warren Streets. While the Shell Oil Refinery storage tanks which rim the hillside (outside the land use survey area) are clearly visible from portions of downtown Martinez, they are not obvious from much of the residential neighborhood below them.

Residences vary substantially in size and some are quite large. The residences also differ significantly in style and appearance, as is characteristic of individual design and construction; some residences have no garage while others have garages fronting on one street with the residence

itself fronting another street. Though most residences are decades old, examples of newer residences and remodeled residences do exist.

Despite proximity to the Civic Center, most undeveloped parcels in this area are physically, functionally, and visually separated. Some parcels overlook the Civic Center but the view to the south is restricted by trees, the hillside, and existing development; these parcels are located near Marina Vista, Miller Avenue, and Dineen and Lang Streets. This area consists of 23 vacant parcels representing 4.9 acres of undeveloped land.

Five vacant parcels, representing 0.8 acres of undeveloped land, are located between Merrihew Drive and Grandview Avenue. Two vacant parcels, totaling one-third acre, are located west of Lafayette Street and north of Ward Street. One vacant parcel, totaling one-fifth acre, is located east of Willow Street and south of Henrietta Street. Many smaller undeveloped parcels, bordered by single family residences, exist but are limited for residential use by the steep slope or by parcel size or shape.

3. Utilities and Community Facilities

This section describes the utilities involved with serving the project site and develops the collection and or storage, the transmission and distribution of the utility and finally presents the project related service aspects. The impacts of the proposed project upon the utility and vice versa will be discussed in the Impact Analysis section.

The utilities discussed are: sewerage (Central Contra Costa Sanitary District), water (City of Martinez Water System and the Contra Costa County Water District), gas and electricity (Pacific Gas and Electric Company), telephone (Pacific Telephone), cable TV-radio (Televents, Inc.), fire protection (Contra Costa County County Consolidated Fire Protection District), Solid Waste (Martinez Sanitary Service, ACME Fill), health service (Contra Costa County Health Department), and various community services. In addition, there will be a brief discussion of utility relocations.

a. Sanitary Sewer

Central Contra Costa Sanitary District (CCCSD) provides sanitary sewer service to most of central Contra Costa County, including Martinez. The District has grown in area from 23,000 acres in 1946, when CCCSD was formed, to its present size of approximately 66,000 acres (103 square miles) (CCCSD Status Report, 1974).

The original District encompassed the communities of Lafayette and Moraga, the City of Walnut Creek, and a corridor to the treatment plant built near the junction of Interstate 680 and State Highway 4 in 1948. The existing District additionally includes most of the San Ramon Valley, Orinda, Pleasant Hill, Martinez, and parts of Concord. Currently, only the City of Concord and Mountain View Sanitary District (near Martinez) maintain separate treatment and collection systems within the central County. Annexation of Mt. View Sanitary District by CCCSD may occur within the next 10 years (Central Contra Costa Wastewater Management Program (CCWMP) EIR/EIS, 1976).

CCCSD has grown from a service area population of 17,000 and treatment capacity of 4.5 million gallons per day (MGD) in 1948, to a population of approximately 300,000 and treatment capacity of 30 MGD in 1976 (CCWMP EIR/EIS, 1976).

Most of the sewer system in the District is a gravity flow system within the Walnut Creek Watershed. Sewage from areas

outside the watershed is pumped into the gravity flow system. Major pumping facilities are located in Orinda, Moraga, Martinez, and the Concord Naval Weapons Station (CCCSD Status Report, 1974).

Wastewater from the CCCSD treatment plant discharges into Suisun Bay via a 4 mile long outfall line. CCCSD is the principal wastewater discharger in the central County. A list of other dischargers in the area is given in Table 3.

i. Service Level - Wastewater Management Program

CCCSD is currently expanding its treatment facilities to meet the growing demand in central Contra Costa County. If CCCSD's Master Plan is fulfilled, the treatment plant would ultimately expand to a capacity of 120 MGD (CCCWMP EIR/EIS, 1976). However, a recent urging by the Federal Environmental Protection Agency (EPA) for a 10 MGD reduction in secondary treatment facilities scheduled for 1978 may curtail future goals of the District to some degree. EPA, as well as State and regional agencies such as the State Water Resources Control Board and the California Regional Water Quality Control Board, San Francisco Bay Region, are considering long-term effects that increased sewage treatment capacity may have on population growth and resulting environmental effects such as air and water pollution.

The CCCSD treatment facilities currently perform primary treatment of sewage with a capacity of 30 MGD. The processes involved include prechlorination, screening, preaeration with grit removal, and primary sedimentation. Before discharge into Suisun Bay, the effluent is chlorinated and sludge is anaerobically digested and discharged into lagoons and drying beds at the facility (CCCWMP EIR/EIS, 1976). Table 4 lists the waste characteristics and operating data of the Treatment Plant in 1974.

Recent expansion of the facilities is scheduled to be completed in 1977. The expansion will increase the primary treatment capacity to 45 MGD and will add secondary and tertiary treatment with a capacity of 30 MGD. This expansion will not be affected by the recent EPA request. The new facilities will include the addition of lime for clarification in the primary sedimentation tanks, biological nitrification and denitrification, dual media filtration, a two-stage sludge conditioning process, and a wet and dry lime process for calcining (a type of heating) and lime recovery (CCWMP, 1976). A second phase of this expansion would increase the advanced treatment capacity to 45 MGD. This

Table 3

EXISTING WASTEWATER DISCHARGERS WITHIN
CENTRAL CONTRA COSTA COUNTY

Discharger	Type of Discharge	Avg. Annual Flow, 1970 (mgd)	Location of Discharge
Municipal Wastewater: CCCSD Treatment Plant Mountain View Sanitary District Treatment Plant City of Concord Treatment Plant	Primary Effluent Secondary Effluent Secondary Effluent	24.9 1.0 4.6	Suisun Bay Peyton Slough Walnut Creek
Water Treatment Facilities: CCCWWD EBMUD	Filter Backwash Filter Backwash	0.05 0.24	Walnut Creek Grayson Creek
Industrial: Pacific Gas & Electric Co. Avon Martinez	Cooling Water Cooling Water	0.31 0.31	Suisun Bay Suisun Bay
Phillips Petroleum Co.*	Sanitary Sewage, Cooling Water, Petroleum Process Waste	13.1	Suisun Bay
Shell Oil Co.	Sanitary Sewage, Petroleum Process Waste	4.14	Carquinez Strait
Stauffer Chemical Co.	Chemical Process Waste	0.1	Peyton Slough

*Includes Monsanto Company waste

Table 4

WASTE CHARACTERISTICS AND PLANT OPERATING DATA, 1974
CENTRAL CONTRA COSTA SANITARY DISTRICT

47

Month	Flow, mgd		Influent Waste Constituents		Effluent Waste Constituents				NH ₃ -N
					BOD		SS		
	Avg Daily	Average Daily Peak	BOD, mg/l	SS, mg/l	mg/l	% Removal	mg/l	% Removal	
January	33.9	46.9	122	139	82	33	64	54	19.0
February	28.2	40.8	146	180	101	24	66	63	20.0
March	37.7	51.1	136	142	91	33	73	49	17.7
April	33.3	47.0	148	160	85	43	67	58	20.3
May	28.1	40.8	167	187	94	44	60	68	20.3
June	26.6	38.7	173	192	115	34	66	66	22.5
July	24.8	37.5	208	166	132	37	75	55	28.6
August	23.3	34.6	205	221	127	38	82	63	4.3
September	23.4	35.7	225	218	119	47	64	71	20.4
October	23.2	35.5	179	229	104	42	88	62	24.2
November	23.1	36.8	219	205	125	43	84	59	27.2
December	25.8	39.9	210	188	152	28	84	55	27.3
Annual Avg	27.6	40.4	178	186	111	37	73	60	22.0

Source: Central Contra Costa County Wastework Management Program EIR/EIS,
Central Contra Costa Sanitary District, 1976

phase is scheduled for 1978. EPA officials have agreed orally to give early approval to a construction grant for this expansion if the proposed advanced treatment is reduced to 35 MGD (Horstkotte, CCCSD).

ii. Martinez Service

The proposed County Detention Facility site is served by a sanitary sewer system that was annexed by Central Contra Costa Sanitary District in 1972. Martinez Sanitary District had previously operated its own collection and treatment system. The integration of the City of Martinez sewage disposal system with that of CCCSD was completed in 1972 at a cost of \$2,300,000. Sewage is now pumped from the old Martinez treatment plant, located near the north end of Berrellesa Street, to the CCCSD treatment plant, a distance of 5½ miles (CCCSD Status Report, 1974). A new trunk line was constructed to integrate the two systems.

The average daily pumping capacity from the Martinez pumping station is 2 million gallons; maximum daily pumping capacity is 4 million gallons (McCoy; CCCSD). The old sewer system in Martinez has some basic problems: high ground water infiltration, inadequate line capacity, poor maintenance access, improper grading (slope), and deterioration due to age. CCCSD currently has no overall program for replacing the old system. Rather, each new development requiring sewer service in Martinez will be evaluated by CCCSD for its effect on the development on the entire system. If improvements are required, the relative effect of the development on the system determines whether CCCSD, a project developer, or a combination of the two will supply the funds for improvements (McCoy, CCCSD).

iii. Project Service

The gravity flow system in the vicinity of the proposed Detention Facility directs sewage from the hilly residential area to the east towards Pine Street, and sewage from southern areas northerly on the main Pine Street lines discussed below. Sewage from areas to the west drains westerly and then northerly in other pipelines towards the pumping facility on the waterfront.

The two existing sewer lines, 8" and 10" in diameter, lie beneath Pine Street and bisect the Detention Facility site. A determination has been made by CCCSD that these lines are inadequate to serve the needs of the Detention Facility. High ground water infiltration and improper grade were cited by CCCSD as the reasons for this determination (McCoy, CCCSD).

The combination of an improved design and a new 12" sewer line would be necessary for adequate flow. This line would serve adjoining neighborhoods to the east and south as well as the Detention Facility.

b. Water Service

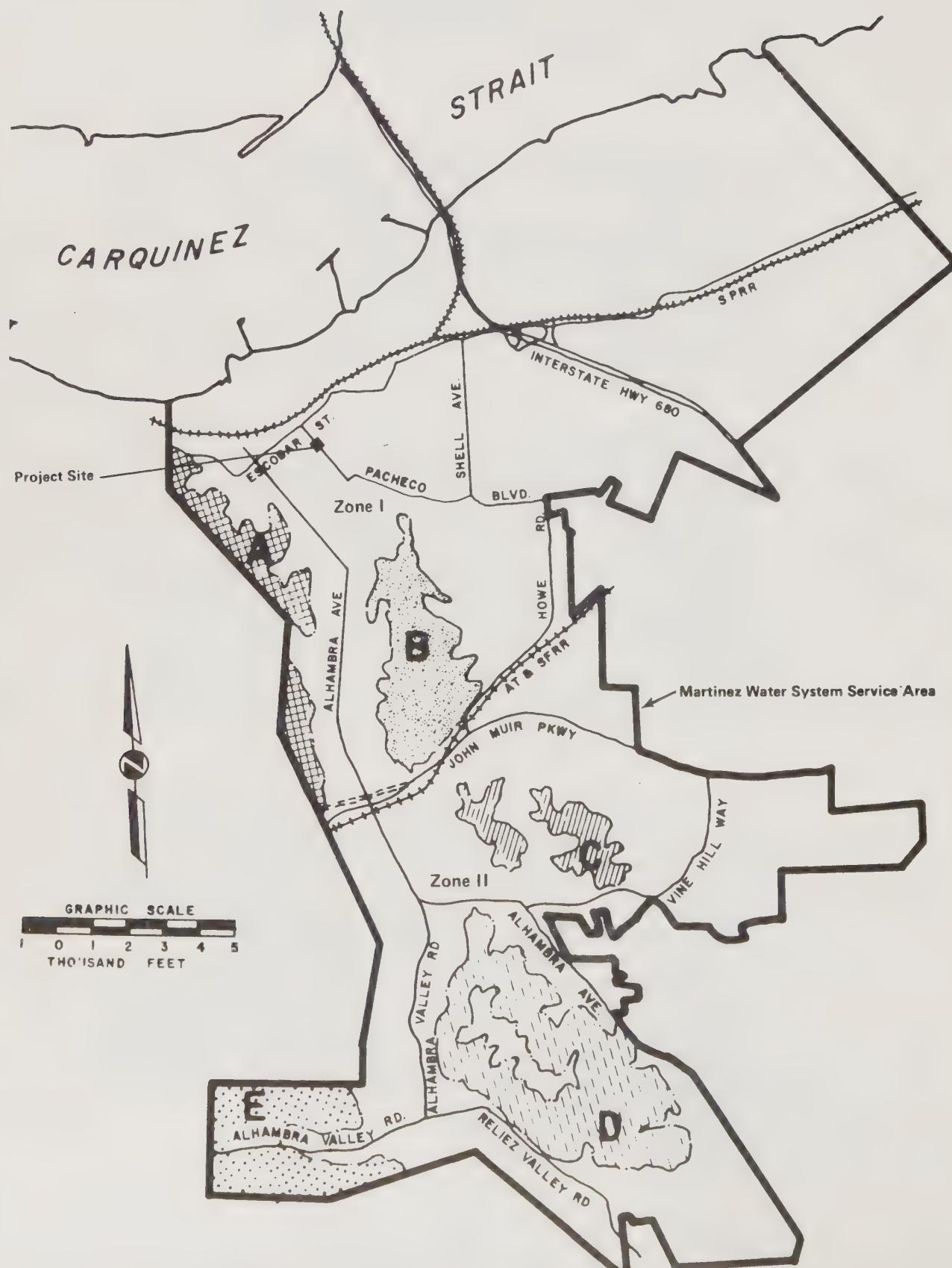
The City of Martinez Water System, which would supply water to the proposed Detention Facility, is located within Contra Costa County Water District (CCCWD). The City purchases raw water from CCCWD, treats it, and distributes it to consumers within the system's service area. The system is a financially self-supporting utility; that is, administration, operation and maintenance is funded directly by the consumers and no additional taxes are necessary. The system is operated under the direction of the City's Director of Public Works. The water system includes facilities for the storage, transmission, and distribution of water to the City customers.

The geographical area served by the City's water system has been determined historically and politically through mutual agreements between the City and Contra Costa County Water District. Basically, the City treats CCCWD water (from the Contra Costa Canal) and distributes it within the water system service area. The present service area for the Martinez Water system is generally that shown on Figure 14. This area includes most of the incorporated city and some bordering unincorporated areas. The western boundary of the service area has not been specifically determined by the City and CCCWD due to the lack of development in that area. As development occurs the appropriate jurisdiction will be mutually determined (Morris, City of Martinez). The LAFCO-determined sphere of influence for urban water service lies on the eastern side of the ridge west of Martinez.

At the same time CCCWD sells raw Contra Costa Canal water to the City, the District operates a system which supplies treated water to the Port Costa area. Some of the pipelines which carry this treated water lie adjacent to the City's pipelines. An example of this situation is on Pine Street at the site of the proposed County Detention Facility (DeVito, CCCWD). A connection, or "intertie" between adjacent pipelines belonging to the two systems serves to partially supply Martinez with treated CCCWD water in case of an emergency (e.g., temporary loss of power in Martinez' pumping facilities). One of the two interties between the two systems is located at the north end of Berrellessa Street, approximately one-half mile northwest of the proposed Detention Facility. The other is located more than 3 miles southeast of the project site. (Morris, Martinez).

Figure 14

Martinez Water System:
Service Area, Zones, Sub-Areas



Source: Waterworks Facilities Report, City of Martinez, California, John Carollo Engineers, 1973

i. The Martinez Water System

The source of water for the Martinez Water System service area is the terminal reservoir, or end point, of the Contra Costa Canal. This reservoir, known as the Martinez Reservoir, is located southeast of the intersection of Howe Road and Pacheco Boulevard in the unincorporated Vine Hill area of Martinez (see Figure 15). Raw water from the reservoir serves two major consumers, the Martinez Water System and the Shell Oil Company (Waterworks Facilities Report for the City of Martinez, Carollo Engineers, 1973).

The City maintains a pump station which delivers raw water from the reservoir to the Treatment Plant located near the northwest corner of Pacheco Boulevard and Howe Road (see Figure 15). Water is tested and treated at the Water Treatment Plant.

The treated water is pumped from the Water Treatment Plant into the actual transmission system. A series of pumps located in strategic spots in the system assure adequate pressure to areas of varying elevations. Six reservoirs in the system augment these pumping facilities and provide reserve capacity for high-demand periods and fire fighting flows (Carollo Engineers, 1973).

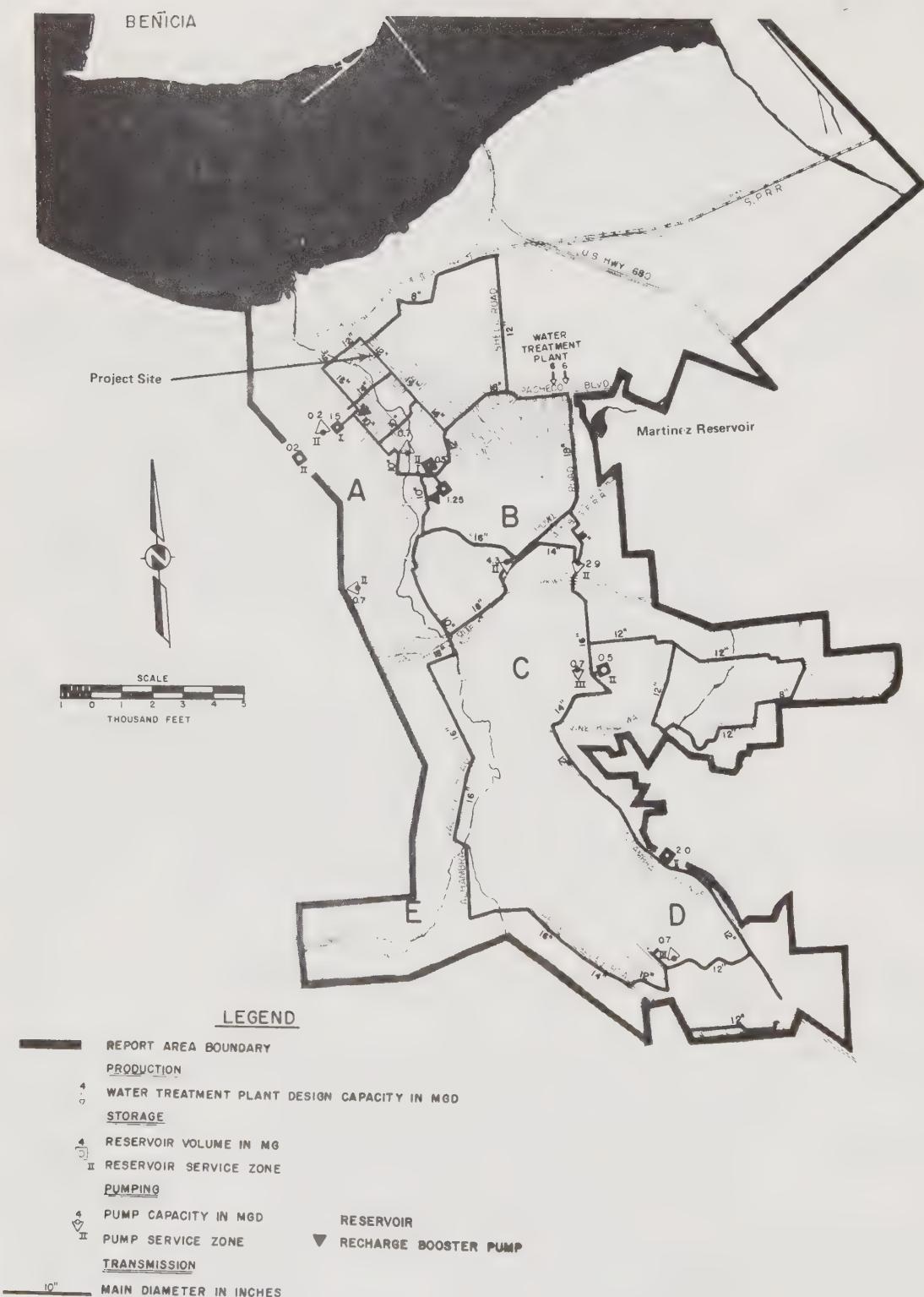
ii. System Capacity

Information for this section is largely taken from Carollo Engineers' "Water Works Facilities Report" for the City of Martinez, 1973. If other references were used they are so noted. The Martinez Reservoir has a maximum volume capacity of 86 million gallons. The Contra Costa Canal supplies water for the reservoir from two sources, the Canal itself and the "Shortcut Pipeline", completed by the Bureau of Reclamation in 1972. This pipeline serves to provide additional flows to the Reservoir; its approximate location is shown on Figure 16.

The Canal has a design capacity at the reservoir of approximately 40 million gallons per day (MGD).

Water quality records from CCWD reflect that the raw canal water has been within the limits of the U.S. Public Health Service Drinking Water Standards at all times (Carollo Engineers, 1973). The current drought may change this record, as it has caused an increase salt and mineral concentrations in the raw water. Chloride is the substance that is monitored to determine the amount of salt in water. The U.S. Public Health Service (USPHS) minimum standard for chloride is 250 mg/l (or 250 ppm) (USPHS Drinking Water Standards, 1969). Recently, the chloride concentration in Canal water has reached a peak day level of 248 mg/l (one day) and a peak hour level of 260 mg/l (DeVito, CCCWD).

Figure 15
Existing Water Works



Source: Waterworks Facilities Report-City of Martinez, California, John Carollo Engineers, 1973

Figure 16
Contra Costa Canal Shortcut Pipeline



Water quality at the Treatment Plant is subject to several tests and treatment processes. Table 5 summarizes the tests performed. Table 6 is an example of finished water quality in 1973. Treatment processes include aeration, flocculation (mixing with chemicals), sedimentation, and filtration.

The treated water is pumped from the Water Treatment Plant into the transmission system by means of six pumps located at the plant. The water is normally discharged at a pressure between 100 and 105 psi. The Carollo report divided the service area of the Martinez Water System into two major pressure zones and five additional subareas, as shown on Figure 14. The area north of the John Muir Parkway (Highway 4) is referred to as Zone I and is generally under 150 feet in elevation. The proposed Detention Facility is in this zone. With the exception of subareas A and B, the water pressure from the Treatment Plant is sufficient to supply Zone I. Adequate pressure in subareas A and B is supplied by the Hillside Drive, St. Mary's, and Mountain View pump stations, as shown on Figure 15. The area south of John Muir Parkway is referred to as Zone II, and is generally over 150 feet in elevation.

Transmission mains are generally considered to be lines 10 inches in diameter and larger. The transmission main system is shown on Figure 15. Water lines extending from the transmission lines are considered distribution lines. The distribution line system in the vicinity of the Detention Facility site is composed of lines which range in size from 2" (Willow) to 12" (Pine) in diameter.

iii. Service Level

The City of Martinez Water System now serves 7,309 customers, all of which are metered. Since 1965, when there were 4,863 customers served, the number of new connections per year has averaged 222. Table 7, taken from the City of Martinez "Official Statement", 1976, summarizes recent water production (treatment) and consumption information.

There is currently no data which groups water consumption by consumer category such as industrial, commercial, institutional, and residential (Morris, City of Martinez). However, the Carollo Engineers report, 1973, indicated that in 1972 the County Administration buildings consumed approximately 5 million gallons, or less than 1% of the total amount consumed that year in the City service area. More recent data are not available for County water consumption.

iv. Adequacy of the Water System

The Carollo Engineers report analyzed the existing waterworks system, estimated future needs, and suggested necessary improve-

Table 5

SUMMARY OF WATER TESTS

<u>Location (1)</u>	<u>Frequency (2)</u>	<u>To Determine (3)</u>	<u>Equip- ment (4)</u>	<u>Remarks (5)</u>
Intake	Daily	pH	1	To determine requirements for caustic soda
		Hardness	1	
	As required	Alkalinity	1	To determine alum requirements
		Chlorides	1	
Flocculators, filters, and system pumps	2 Hours	Turbidity	2	To determine alum requirements
		Turbidity	3	
		Copper	1	
Filter effluent	Continuous	Turbidity	5	
System pumps	Daily	Fluoride residual	1	
	Daily	Bacteria count		No positive record
Distribution piping random points	20 times monthly	Bacteria count		No positive record

Col. 4: 1, Reagent and color comparator
 2, Turbidimeter
 3, Jar test
 4, Color comparator
 5, Hach turbidimeter

Table 6

DOMESTIC WATER ANALYSIS
COMPOSITE SAMPLE JULY 1973

<u>Constituents</u>	<u>Parts Per Million</u>	<u>Desirable Limitations</u>
Calcium (Ca)	24	33 Med. Hard 75 Permissible
Magnesium (Mg)	20	125
Sodium (Na)	91	350
Potassium (K)	7	-
Ammonium (NH ₄)	< 0.025	0.043
Iron (Fe)	< 0.05	0.3
Manganese (Mn)	< 0.01	0.05
Fluorides (F)	0.7	1.0
Carbonates (CO ₃)	0	25.
Bicarbonates (HCO ₃)	87	250.
Chlorides (Cl)	134	250.
Sulfates (SO ₄)	75	250.
Sulfides (S)	< 0.01	-
Nitrates (NO ₂)	< 0.001	-
Nitrates (NO ₃)	< 0.5	45.0
Arsenic (As)	< 0.01	< 0.1
pH	8.0	
Hardness as CaCO ₃	143.0	8.33gr/gal
Total Solids @ 105°C	405	
Electrical Conductivity Mhos/cm x 10 ⁵ @ 25°C	70	
Color	0	Color units
Odor	None	
Turbidity	0.07	Jackson units

$\left\{ \begin{array}{l} 220 \text{ ppm [medium hard]} \\ 50-100 \text{ ppm [very soft]} \\ 500-1000 \text{ ppm} \end{array} \right.$

TABLE 7

WATER PRODUCTION AND CONSUMPTION
Martinez

	1971/72	1972/73	1973/74	1974/75	1975/76
Water Production (treated) (million gal.)	1,553,420	1,477,524	1,388,925	1,384,039	1,494,726
Water Consumption (million gal.)	1,489,250	1,460,586	1,329,641	1,383,061	1,475,525
Average number of service connections	6,863	7,038	7,153	7,300	7,309
Consumption per average connection (thousand gal.)	217.0	207.5	185.9	189.5	201.8

57

Source: Official Statement for the City of Martinez, November, 1976.

ments. The report generally concluded the following: 1) Water from the Contra Costa Canal that is supplied to the Martinez Reservoir is of sufficient capacity to provide the needs of the Water System beyond the year 2000. 2) Sufficient capacity is available at the Water Treatment Plant to serve the area through at least 1995, provided that no new "high rate" (e.g., industrial) consumers move into the area. 3) No new storage facilities are required until beyond 1995. 4) Several additional transmission mains will be required to complete the system and provide sufficient pressures to existing and projected consumers. 5) Pumping facilities improvements will be necessary to increase pumping capacity, satisfy future "peak hour" demand, and augment future fire fighting capability. 6) A specific construction plan through 1980 for the suggested improvements may be funded by the City from remaining water bond authority or from operating revenues.

The City of Martinez is currently on schedule with the suggested improvements and foresees completion of the improvements to assure adequate water supply for approximately the next thirty years (Morris, City of Martinez).

v. Water Quality - Effects of Drought

Certain facets of water quality within the Martinez Water System are controlled at the Water Treatment Plant. Many quality problems are treatable. For example, acidity may be reduced with the addition of chlorine; alkalinity may be reduced with the addition of caustic soda; turbidity may be reduced with the addition of alum, a precipitating agent (Fredrickson, CCCWD). However, existing treatment facilities are not equipped to control salinity. Current known processes for reducing salinity are too costly to be practicable. These methods include distillation and demineralization (Fredrickson).

The effects of increased salinity on the general public is not well understood (Gerow, County Health Department). Some persons have a known physiological intolerance to sodium (the common form of salt is a combination of sodium and chloride). Others may have the same problem, but may not realize it. Most persons suffering from sodium intolerance are middle-aged or older (Gerow). Other health problems, as listed in Table 8, may be accentuated by higher than normal concentrations of salts and minerals.

Increased salinity may affect industry, vegetation, and wildlife as well as the general public. Saline water often causes salt build-up in industrial systems; additional water is required to purge these systems more often than usual. Many plant species, including agricultural crops, are sensitive to high salt concentrations and fare very poorly during drought conditions. Wildlife, particularly estuarine and fresh water species, may be severely affected as salt water intrudes further into the Delta and changes environmental conditions.

TABLE 8
HEALTH EFFECT'S GUIDELINE

Chemical Element	Potable. No Ill Effects Expected. Taste may be noticeable	May Become Health Hazard* for Special Cases if Consumption Maintained	Use and Other Source if Available	Average Concentration on 1/25/77. (CCCWWD Treatment Plant)
Nitrate NO_3^-	0-10 ppm	10-40 ppm	40 ppm and above	3.4 ppm
Sodium Na^+	0-200 ppm	200-1000 ppm	1000 ppm and above	95 ppm
Magnesium Mg^+	0-600 ppm	600-1000 ppm	1000 ppm and above	35 ppm
Calcium Ca^+	0-50 ppm	50-200 ppm	200 ppm and above	14 ppm
Potassium K^+	0-1000 ppm	1000-2000 ppm	2000 ppm and above	6.1 ppm
Chloride Cl^-	0-250 ppm	250-500 ppm	500 ppm and above	140 ppm
Total dissolved solids	0-500 ppm	500-1000 ppm	Over 1000 ppm	429 ppm

*Cardiacs, those with renal diseases, hypertensives, calcium restricted diet, sodium restricted diet, and pediatric formulas.

Existing published standards pertaining to this subject are non-existent or unavailable therefore, the data contained in this table represents our best judgement in providing a guide for your use.

Each individual or patient will have any personal physiological variations and if concerned further advised to consult their own physician.

Households utilizing home water softeners and persons on sodium restricted diets need to be concerned with the increase in sodium that will be found in their water system during this critical period.

Source: Contra Costa County Health Department, January, 1977.

The Martinez Water Treatment Plant monitors chloride levels (as well as other substances) on a daily basis (Pease, City of Martinez). Chloride levels have never been above 250 ppm (the U.S. Public Health Service minimum standard). The maximum chloride concentration reached so far this winter was 224 ppm, which was recorded on January 12, 1977. The average chloride concentration at the Treatment Plant over the past few months has been 185 ppm (Pease). In comparison, chloride concentration in East Bay Municipal Utility District water has recently averaged 7 ppm (Simpson, EBMUD).

vi. Project Service

The proposed County Detention Facility site is located within Zone I of the water distribution system of the Martinez Water System. A 12" transmission line is located beneath Pine Street, which bisects the site (see Figure 15). This 12" line generally serves the County Civic Center buildings, residential areas to the east and south, and commercial buildings to the west. The City of Martinez has verified that the 12" line is adequate to supply the estimated water consumption requirements of the Detention Facility in addition to existing consumers (Morris, Martinez).

c. Gas and Electrical Service

Both electricity and natural gas will be supplied by the Pacific Gas and Electric Company (P.G.&E.). P.G. & E.'s local business office is located at 910 Main Street in Martinez. Electricity and natural gas are currently proposed to be major energy sources for the proposed Detention Facility. However, recent energy curtailments and questions of continued supply, particularly of natural gas, may cause the proposed usage to change before the Facility is constructed, or after occupancy. Recent rulings on and estimations of future energy supplies are mentioned in this section, and are discussed in more detail in the energy background report, Chapter 15, and the energy section of this report.

i. Existing Service

Electricity:

P.G.&E. has stated that existing service capacity in the area of the proposed Detention Facility is adequate to serve the electricity needs of the Facility in addition to existing consumers. (Hove, P.G.&E.). Existing service in the area includes overhead electrical lines on Mellus, Willow, Green, Thompson, and Court Streets. Underground lines currently exist only on Pine and Ward Streets in the immediate area of the proposed Facility. Information is not available on power supply and existing consumption in the area (Hove).

Natural Gas:

P.G.&E. (Hove) has also stated that existing natural gas service capacity in the area of the proposed Facility is adequate to serve Facility needs in addition to existing needs. To clarify, the existing underground gas lines are of sufficient size to supply all needs if natural gas is available. Recent California Public Utilities Commission (CPUC) rulings have limited customer consumption (see energy section) and, more important, natural gas is in short supply--both short-term and long-term. Existing gas service lines in the site vicinity are located under all streets in the vicinity and vary in size from 2" in diameter to 6" in diameter.

ii. Project Service

Electricity:

Local power supply for the proposed Facility, would come from an existing underground transformer vault beneath Ward Street. Service to the Facility would be underground. Prior to construction, all existing overhead lines within the project will be removed.

Service to residential areas east of the site will be relocated to existing overhead lines on Susana Street until such time as P.G.&E. can underground this service on Mellus Street (during the last phases of Facility construction). Service to existing customers outside the project site will not be disrupted (Hove).

Natural Gas:

Natural gas will be furnished to the proposed Facility via a 3" diameter line connection to an existing 6" line on Pine Street. The 6" line currently serves all residences and public buildings east and west of Pine Street, including the existing main jail and the County Administration Building. All existing gas lines within the site will be abandoned prior to construction of the Facility. Service to existing customers will not be interrupted; rather, the service will be routed through the existing gas line network surrounding the site.

iii. Estimated Usage

Detailed architectural and engineering design of the proposed Detention Facility has not yet been determined. As a result, specific estimates of electricity and natural gas usage within the Facility cannot yet be made (Voelz, Bentley Engineers). However, rough estimates have been calculated. Based on current and expected future conditions, Bentley and Associates Consulting Engineers have generally made the following recommendations for use of electricity and natural gas within the proposed Facility:

- . Electricity should be used for all lighting; pumps for heating, ventilating and plumbing systems; office equipment; air conditioning; and some kitchen and laundry appliances. In addition, electrical outlets will be provided as a back-up energy source for recommended natural gas uses in the kitchen and laundry.
- . Natural gas should be used for all cooking and some laundry facilities (eg. clothes dryers), for partial space heating, in combination with fuel oil, and possibly as a back-up for the proposed solar water heating system.

The above recommendations are based on several assumptions which have not yet been assured. These include: 1) a solar collector system will be the major energy source for water heating (with a fuel oil or natural gas back-up system for poor weather conditions); 2) a comprehensive heat-reclaim system will help to conserve a substantial amount of energy used for space conditioning; 3) the building will contain less than 180,000 square feet of heated space; 4) windows on perimeter walls of the Facility will

cover less than 20% of the total area; 5) exterior walls and roof areas will have very good insulative values.

The preferred (Voelz, Bentley Engineers) recommended space heating would use natural gas as the major energy source, except in times of gas shortages (i.e., winter months), when fuel oil would be used.

Bentley Engineers (Voelz) currently believes that if all of the above assumptions are true, the use of natural gas for the partial space heating energy source is feasible. The final decision will be made when all specific architectural and engineering design features are known, and it can be accurately estimated if the recommended usages will not require more than 50,000 cubic feet of natural gas per day. This figure is the maximum allowed by CPUC. If the specific design is estimated to require more than 50,000 cubic feet of gas per day, the proposed Detention Facility will probably use natural gas only for cooking and laundry facilities, and the energy source for space heating will probably be provided by fuel oil.

iv. Design Loads

Electricity:

Robert Voelz of Bentley Engineers has estimated the following "peak hour" demand loads for electricity, where KWH equals "kilowatt-hour," meaning the amount of energy equal to that expended by one kilowatt in one hour.

<u>Usage</u>	<u>Peak Hour Demand</u>
Lighting	400 KWH
Pumps for heating, ventilating and plumbing systems	600 KWH
Office equipment	200 KWH
Air conditioning	400 KWH
Kitchen	300 KWH
Total	1,900 KWH

(Actual total demand 1,000-1,200 KWH)

Although the total additive peak hour demand load is 1,900 KWH, it has been estimated that the actual peak hour demand will be only 1,000-1,200 KWH. This difference is due to the fact that some uses, such as air conditioning equipment, will not be operating at the same time as other uses, such as heating system pumps.

The yearly total amount of electricity usage has been estimated at 6,581,425 KWH. This total amount has been broken down on a monthly basis, as shown on Table 9. The estimated cost for electrical energy for one year, based on current rates, is \$131,630 (Voelz), which equals \$10,970 per month.

Natural Gas:

Due to the lack of a detailed building design and the resulting uncertainty of the usage of natural gas, peak-hour and peak-day loads have not been estimated (Voelz). However, an estimate of annual total gas usage was made which was based on the use of gas for kitchen, laundry, and space heating (with no fuel oil), and the inclusion of solar and heat-reclaim systems. This total annual estimated usage is 119,055 therms, or approximately 11½ million cubic feet of natural gas, as shown on Table 9. The estimated annual operational cost for a gas-fired heating system is \$19,050. This figure does not include kitchen and laundry uses, and, most important, is based on today's rates. Natural gas prices are expected to markedly increase in the next few years.

v. Other Energy Sources

Bentley Engineers has recommended that, faced with expected natural gas price increases and general shortages, the Detention Facility should include fuel oil as an alternate energy source (Voelz). In other words, systems should be designed so that fuel oil may be used in place of natural gas if necessary. This essentially means that duplicate systems must be constructed, because gas and oil systems are not entirely interchangeable. At this time fuel oil is a less preferred fuel because it is less efficient, is harder to store, is more expensive than natural gas, and generates more air pollution than natural gas. However, it appears to be the most realistic alternate to natural gas available at the present. On the other hand, fuel oil costs are also expected to markedly increase in the next few years. American Society of Heating, Refrigerating, and Air Conditioning Engineers has estimated that fuel oil costs will increase 500% in the next 30 years.

In response to these uncertainties and energy conservation in general, the use of a solar-powered water-heating system and a heat-reclaim system has been considered. The use of both or either of these systems would reduce oil and/or gas usage. However, installation of these systems would probably be more costly. This issue is discussed in greater detail in the energy section of this report and in Chapter 15 of the Background Report.

TABLE 9
ESTIMATED ENERGY SOURCE USAGES

Annual Estimated Fuel Oil Usage for Heating and Electrical Usage
(Assuming Natural Gas Used Only for Kitchen and Laundry; No solar
or Heat-Reclaim Systems)

<u>Month</u>	<u>Gallons Oil</u>	<u>KWH Electrical</u>
January	17,050	498,280
February	14,350	450,000
March	13,340	533,965
April	11,275	517,975
May	9,690	569,750
June	7,820	553,660
July	6,990	587,645
August	6,935	623,330
September	6,830	607,235
October	8,575	587,645
November	12,440	553,660
December	16,040	498,280
	<u>131,335</u>	<u>6,581,425</u>

Estimated annual costs = \$49,890 for oil; \$131,630 for electricity.

Annual Estimated Natural Gas Usage for Heating and Electrical Usage
(Assuming No Fuel Oil Usage for Heating; Inclusion of Solar and Heat-
Reclaim Systems)

<u>Month</u>	<u>Therms Gas</u>	<u>KWH Electrical</u>
January	15,430	498,280
February	13,000	450,000
March	12,100	533,965
April	10,230	517,975
May	8,790	569,750
June	7,060	553,660
July	6,360	587,645
August	6,290	623,330
September	6,200	607,325
October	7,780	587,645
November	11,265	553,660
December	14,550	498,280
	<u>119,055</u>	<u>6,581,425</u>

Estimated annual costs = \$19,050 for gas; \$131,630 for electricity.

Source: Donald Bentley and Associates Consulting Engineers, Nov. 15, 1976.

d. Telephone Service

Telephone service will be furnished by Pacific Telephone and Telegraph Company (PT&T), whose local business office is located at 609 Las Juntas, Martinez. Service to the existing County buildings within the Civic Center was upgraded in early 1976 with the installation of the direct-dial "centrex" system. Service for the centrex system originates on the seventh floor of the County Administration building.

i. Existing Telephone Service

Most existing telephone lines in the area of the Detention Facility Site are overhead lines. These overhead lines generally serve the residential areas within the site and east and south of the site. Underground telephone cables occur under most of Ward Street, north of the site, and under Pine Street, north of Green Street.

The Pine Street telephone cable extends through the middle of the site. A 200-pair cable, which may serve 200 telephones, is enclosed within a conduit which is buried approximately 30 inches underground to Green Street where it then extends overhead. There is capacity within the conduit for several additional telephone cables. In the past the 200-pair cable served County offices within the Contra Costa County Employees Federal Credit Union building at 1111 Pine Street, south of the site. These County offices were recently vacated, as the employees were moved to the County Administration building. Currently, the 200-pair cable, which originates on the seventh floor of the Administration building, is not in use.

ii. Project Service

Telephone service for the proposed Detention Facility will be coordinated with the direct dial centrex system within the County Administration building. The County Public Works Department has estimated that 150 telephones will be required within the Detention Facility. The existing facility has 12 to 15 telephones. The Pine Street cable is proposed to serve the new Facility; it will not extend beyond the Facility.

e. Cable TV-Radio

Televents, Incorporated, located in Martinez, provides cable television and radio services within its franchise area. This area is generally bounded by the Carquinez Strait on the north, Interstate 680 on the west, State Highway 24 on the south, and the Briones Hills on the east. This area includes both incorporated and unincorporated areas of Martinez, Pleasant Hill, and Lafayette. Some unincorporated areas of Walnut Creek and the community of Orinda are also within Televents' franchise area (McNay; Televents, Inc.).

Televents currently provides service to 25,000 customers. Service expansion is limited by the geographical area for which the company is franchised. Expansion, therefore, consists of extending service to new customers within the franchised service area. The average number of new customers in recent years has been 350 per year. The maximum number of customers is estimated at 28,000 to 30,000; Televents expects this maximum coverage to be reached within 5 to 10 years. (Shelby; Televents, Inc.).

i. Description of Service

Televents owns, operates and maintains the entire cable service network for its franchise. This network includes a large antenna and associated transmitters on a hill near Lafayette, and the transmission system itself. The system basically consists of trunk and feeder lines, amplifiers, taps, and signal splitters. The entire network currently transmits a 12 channel television signal at 40 decibels (a decibel in this sense is a unit used to describe the strength of an electric signal) into the main trunk lines. Radio service is transmitted within the same network and signal strength.

The television signal is carried first on trunk lines which can carry a transmitted signal for 1800 feet before an amplifier must be installed to increase the signal. Feeder lines carry the signal from the trunk lines to a distribution point, and then to the viewing station, i.e., TV set. Transmission lines can be located either above ground or underground. Service to newly developed areas is underground. New service to an existing developed area may be above ground or underground. Taps and splitters are devices used to connect trunk lines to feeder lines and feeder lines to distribution points, and distribution points to viewing stations.

The minimum strength signal required to produce a clear television picture is .3 decibels. The television signal is

divisible in 2 ways. The first way is to connect the feeder line to a series of viewing stations with each station being connected directly to the next station. When connected in this way, each succeeding viewing station receives 1/2 the signal of the preceding viewing station. The second method is to connect the feeder line to a main distribution panel, with outlets for each viewing station. Each station is then connected directly to the distribution panel with a minimal amount of signal loss.

ii. Project Service

The area near the County Civic Center Detention Facility Site is served by two existing Televents, Incorporated cable television and radio trunk lines. One line is located on Escobar Street. The second line is located on Mellus Street. Both lines are overhead lines which are supported by Pacific Telephone Co. poles. The Mellus Street line will be used to serve the proposed Detention Facility because it is immediately adjacent to the project location and the signal strength is the stronger of the two lines (McNay; Televents, Inc.).

Cable television and radio service will be extended to the Detention Facility from the Mellus Street trunk line near Willow Street. A new feeder line will be installed underground and will terminate at a main distribution point within the Facility. Mr. McNay of Televents, Inc. has stated that the Mellus Street trunk line has a signal strength which is adequate (above 20 decibels) to serve the Facility in addition to existing customers. Amplifiers may be necessary on the feeder line to provide adequate strength for each television set and for necessary radio connections. Electrical power for the amplifiers is supplied by P.G. & E.

The current design of the Detention Facility (2/4/77) includes provisions (outlets) for 8 television sets in each of the nine housing modules. However, it is expected that only 4 sets will be installed in each module at the time of occupancy of the Facility. Other sets will be provided if needed. The Department of Public Works has estimated that a maximum of 25 to 35 sets will be in operation at one time, and a maximum of 50 sets will be necessary in the entire Facility.

It is not known at this time how many radios will be connected to the cable service. Music may be piped from a single source to all housing modules, each module may have an individual radio, or each module may have many radios with cable service. Specific outlets for radios are not necessary, as they can be connected to television cables. However, additional costs for the radio service can be expected.

f. Fire Protection

The proposed Detention Facility is within the Contra Costa County Consolidated Fire Protection District (CCFPD). The District provides fire protection services within most of central Contra Costa County. The fire stations nearest the Detention Facility site are Station #14, located at 521 Jones Street and Station #12, located at 1240 Shell Avenue. Both are in Martinez. Station #14 is less than one half mile (by street) southwest of the site, while Station #12 is approximately one mile southeast. CCFPD (Nielsen) and the City of Martinez (Morris) agree that there is adequate service capacity to serve the proposed Facility without diminishing service to existing demands.

i. Existing Service

Fire hydrants are located on corners of nearly all street intersections within and immediately surrounding the project site (one hydrant per intersection). Exceptions are the corners of Willow and Ward Streets, Willow and Green Streets, Willow and Mellus Streets, and Court and Mellus Streets (Nielsen, CCFPD). The reason for these exceptions is the difference in hydrant requirements in commercial and residential areas (minimum distance between hydrants is 300 feet in commercial areas and approximately 500 feet in residential areas).

Water supply to fire hydrants within the vicinity is from Martinez Water System transmission or distribution lines. A 3" diameter line connects each hydrant to a local water system line.

The local fire alarm system is powered by existing overhead electrical lines which are suspended by Pacific Telephone Co. poles along Pine Street.

ii. Project Service

Inspector Robert Frost of CCFPD has stated that fire hydrants must be located a minimum of 300 feet apart to adequately serve the proposed Facility. Site locations for new hydrants have not yet specifically been determined. New fire hydrants will be connected to new or existing water lines via 3" connection lines. The existing fire alarm line on Pine Street will be relocated on Willow Street to continue existing needs; the proposed Facility will use an interior phone-type alarm system. Types and locations of interior fire protection devices can not be specified until detailed building plans are available (Nielsen, CCFPD).

g. Solid Waste

Waste disposal in central Contra Costa County is shared by eight private collectors serving Alamo, Benicia (Solano County), Clayton, Concord, Danville, Lafayette, Martinez, Moraga, Orinda, Pleasant Hill, Pacheco, Rodeo and San Ramon. All solid wastes from this area are hauled by truck to the ACME Fill Corporation landfill located on Arthur Road east of Martinez.

i. Capacity. Recent studies have indicated that ACME Fill landfill will be the primary solid waste disposal site for the central County for at least the next forty years. These studies include the "Preliminary Refuse Disposal Plan," an adopted part of the Utilities Element of the General Plan for Contra Costa County, adopted by the County Board of Supervisors September 4, 1973; the comprehensive "Contra Costa County Solid Waste Management Report" (SWMR), 1975; and the "Contra Costa County Solid Waste Management Plan" (SWMP) which was based on SWMR and was approved by the Board of Supervisors March 3, 1976.

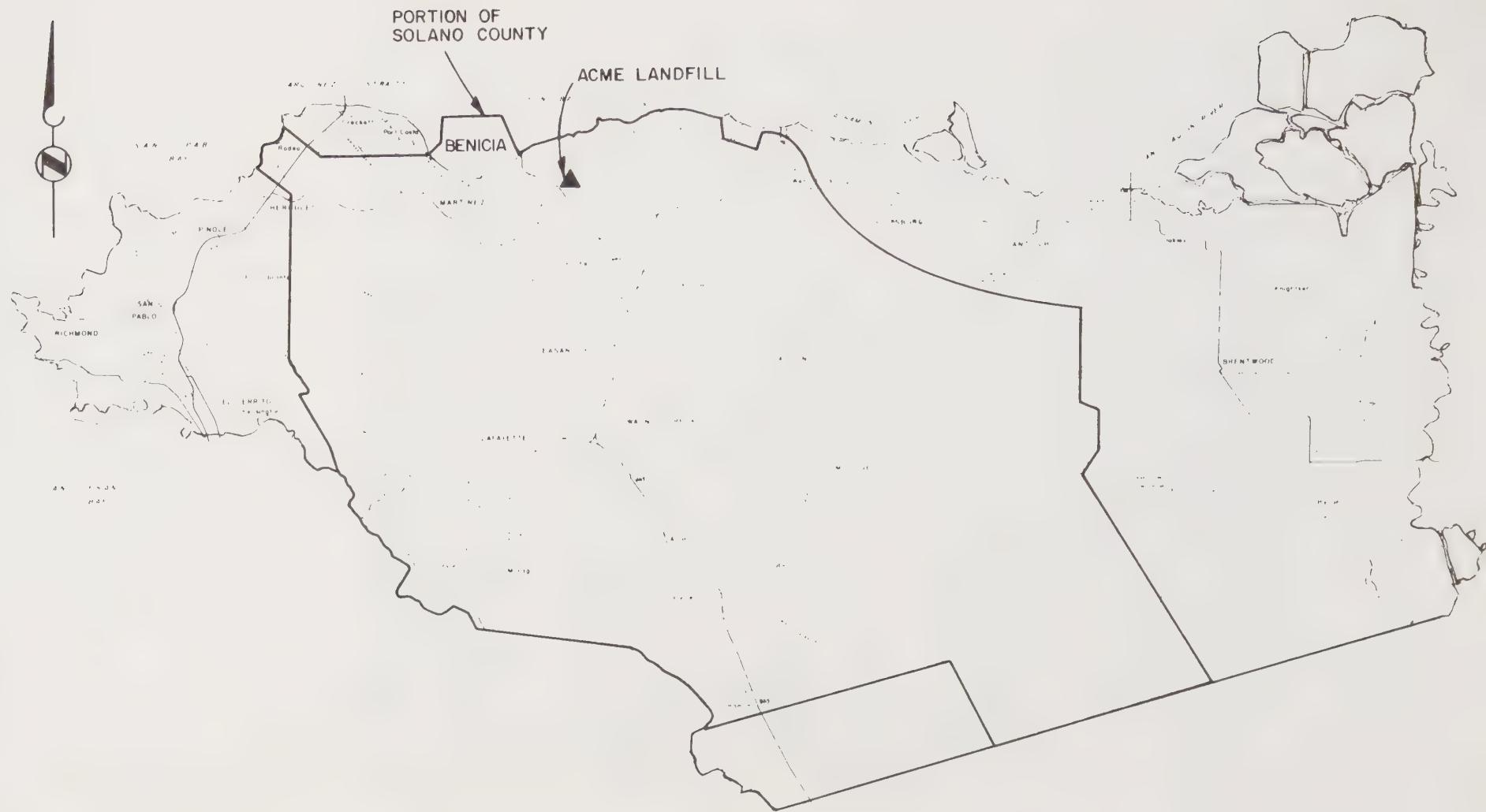
The ACME Fill service area currently covers 474 square miles in central Contra Costa County and Benicia in Solano County (see Figure 17). The landfill, begun in 1958, contains 536 acres and has an estimated available volume of 850 million cubic feet (SWMR). In 1975, the estimated total amount deposited at ACME Fill was 1,136 tons per day (SWMR). The composition of solid wastes delivered to landfills in Contra Costa County is summarized in Table 10.

The Solid Waste Management Report calculated that, if present disposal practices continue the present capabilities of ACME Fill will be exhausted by the year 2010. Other landfills in the County would be filled by the following years: West County Fill (Richmond), 2010; Pittsburg, 1980; GBF (Antioch), 1980.

ii. Reclamation. Two types of reclamation are currently occurring at the ACME Fill landfill: 1) Los Angeles By-Products operates a tin can separator machine which recovers approximately 300 tons of ferrous metals per month, 2) ACME Fill Corporation separates large, high value items by hand (appliances, machinery parts, etc.) and recovers approximately 100 tons of ferrous metals and 6 tons of aluminum per month (SWMR).

Figure 17

Present Solid Waste Service Area Boundary



Source: Central Contra Costa Wastewater Management Program EIR/EIS, Central Contra Costa Sanitary District 1976

Table 10

COMPOSITION OF CONTRA COSTA COUNTY SOLID WASTES
Percent by Weight of Wastes Delivered to Landfill

	Residential			Average countywide	Commercial- industrial
	West	Central	East		
Paper					
Newspaper	10	--	--	9	5
Corrugated	7	--	--	6	35
Other	38	--	--	35	25
Total	<u>55</u>	<u>43.0</u>	<u>48</u>	<u>50</u>	<u>65</u>
Garbage	5	11.5	5	5	5
Yard, garden wastes	7	13.5	20	15	--
Metals					
Ferrous	--	8.0	4	7	4
Nonferrous	--	--	1	--	--
Aluminum	--	0.8	--	0.9	0.8
Other	--	0.5	--	0.1	0.2
Total	<u>10</u>	<u>9.3</u>	<u>5</u>	<u>8</u>	<u>5</u>
Glass, ceramics	12	10.0	10	10	8
Plastics	5	5.0	2	2	3
Rubber	-- ^a	-- ^b	1	1	1
Leather, textiles	-- ^a	-- ^b	1	2	3
Wood	-- ^a	-- ^b	1	1	4
Other nonclassified	6	7.7	7	6	6
Grand total	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>

a. Included in total for other nonclassified.

b. Included in total for plastics.

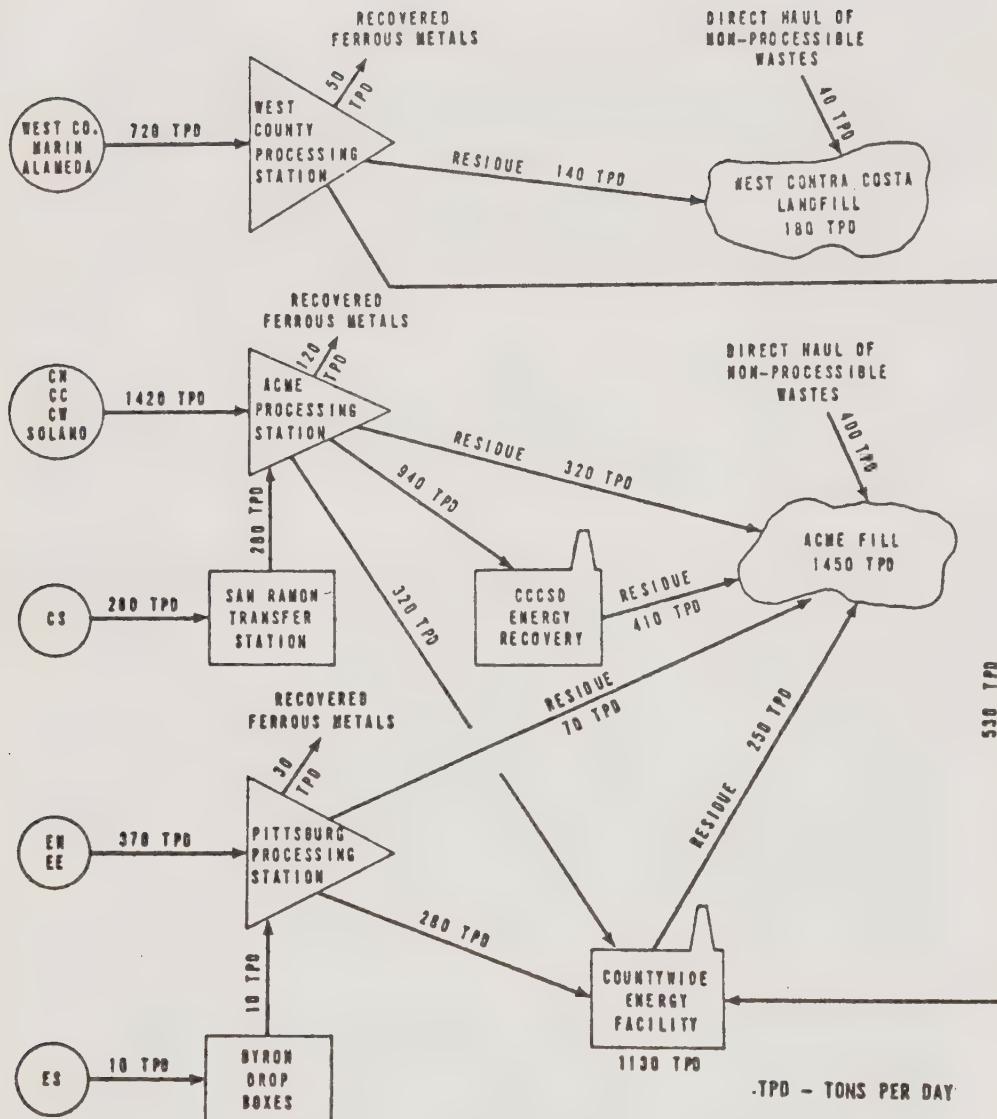
The long range management plan recommended in the County Solid Waste Management Plan would utilize extensive material recovery programs and energy recovery facilities, and would limit the county landfill sites to ACME Fill and Richmond. Figure 18 is a diagram of this plan. Implementation of this plan will result in a greater than 25% reduction in waste disposed in landfills, and no new landfills would be required through the end of the year 2020 (SWMR). Figure 19 depicts projected population and solid waste volumes upon which this long range plan was based.

iii. Project Service. The proposed County Detention Facility would be served by Martinez Sanitary Service (MSS), a private, franchised collection company. MSS collects wastes within the city limits of Martinez. Waste would be hauled approximately 4 miles east to the ACME Fill landfill.

MSS collection vehicles (trucks) collect wastes from the existing main jail 6 days each week, between 5:00 a.m. and 5:30 a.m. each day. The jail generates approximately 3 yards of wastes per day. The wastes are stored outside the jail in two 1½ yard containers. Wastes are dumped into the trucks, where they are compacted. The trucks hold a maximum of 28 yards of compacted waste (approximately 56 yards loose) (Bissio, MSS). The jail is a middle stop of a daily route which begins at the company's service yard near the north end of Berrellessa Street, covers a portion of north Martinez (on Berrellessa Street, Alhambra Avenue, and Main Street), and extends into southerly residential areas along Pine Street. The monthly service charge for the existing service for the main jail is approximately \$200.

Martinez Sanitary Service has stated that adequate service will be available for the proposed Detention Facility, should it be approved (Bissio; MSS). Monthly costs and pick-up timing will depend on the size of containers to be used and the number of collections per week that are necessary (see Impacts and Mitigation Measures sections). Solid waste must, under Public Health statutes, be collected a minimum of once per week (Bissio).

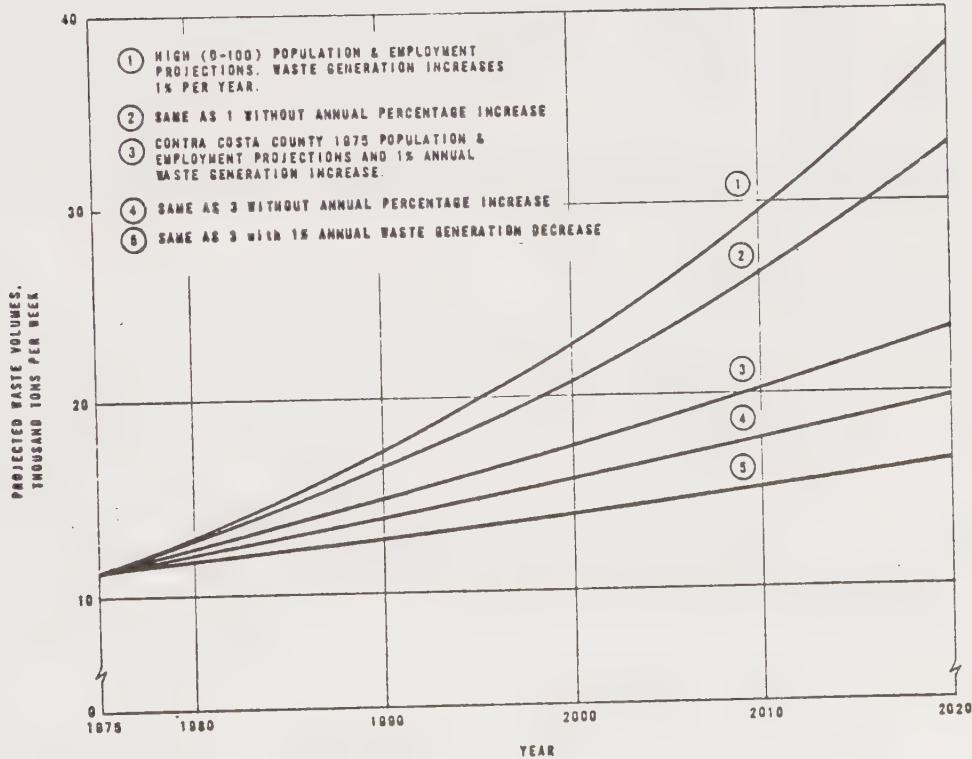
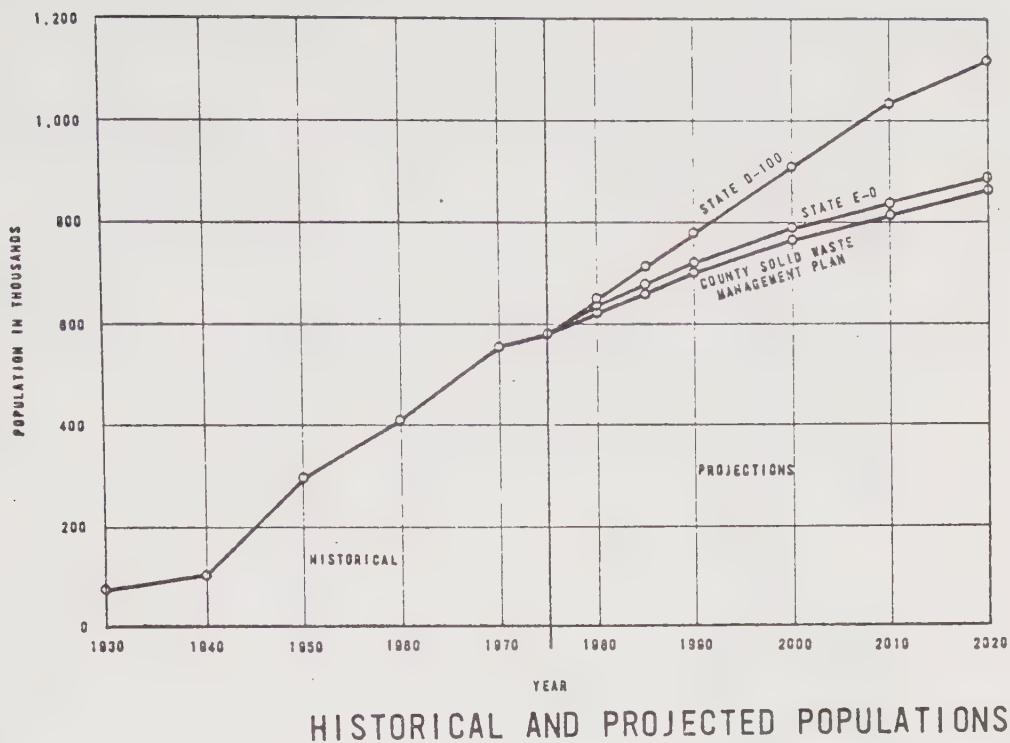
Figure 18



SCHEMATIC SOLID WASTE FLOW DIAGRAM
RECOMMENDED PLAN-LONG RANGE
(1990-2020)

Source: Contra Costa County Solid Waste Management Plan, Nov. 1976

Figure 19



Source: Contra Costa County Solid Waste Management Plan, Nov. 1976

h. Utility Relocations/Abandonments

Providing utility services to the proposed County Detention Facility in addition to construction of the Facility will require major relocations or abandonments of existing utilities. This matter is discussed separately in each specific utility section of the Utilities section, plus in the project description; the purpose of this section is to combine and summarize all utility relocations and abandonments that will occur if the Detention Facility is approved and constructed. Figure 20 shows existing underground utility locations and Figure 21 shows the proposed relocations. Proposed underground electricity, telephone, television and fire alarm lines are not shown as the future locations are not yet known.

All existing utilities within the Facility site on Green and Thompson Streets will be either abandoned in place if located underground, or removed if located overhead. Underground utilities on both of these streets include natural gas lines, sanitary sewer lines, and water distribution lines. Overhead utilities include electrical lines, telephone lines, and cable television lines. In all cases except sewer lines, removal or abandonment of these utilities will have no effect on existing customers surrounding the site. Currently, sewer lines on Willow Street drain into the Green or Thompson Street lines. To continue sewer service to residences on Willow Street, the County will contract the design and construction of a new line on most of Willow Street which will drain into an existing line on Mellus Street. Sewage from the northerly portion of Willow Street will continue to drain northerly to an existing Ward Street line.

All existing utilities on Pine Street within the site will be abandoned in place or removed, and most services will be relocated. The existing overhead fire alarm line will be removed, and the service will be relocated to Willow Street. Water, sanitary sewer, and natural gas services will be re-located under the proposed Pine Street diversion, as discussed in the following paragraph. Telephone, electricity and cable television services, all located overhead on Pine Street, will be removed; service to existing users surrounding the site will not be affected. A portion of the telephone cable, currently unused, is located underground north of Green Street and may be removed prior to construction. A portion of this cable, or a replacement, will be used for Detention Facility telephone service.

New water, sanitary sewer, and natural gas lines will connect existing services at the intersection of Pine and Mellus Streets to existing services on Court Street. The new lines on Court Street will replace existing lines on Court Street for a distance of up to four blocks. The new sewer line will be larger and of an improved design. This 12" diameter line will connect two existing lines (8", 10") under Mellus Street to the existing system at Court and Escobar Streets. A new

Figure 20
EXISTING UNDERGROUND UTILITIES



Figure 21
PROPOSED MODIFICATIONS TO UNDERGROUND UTILITIES



3" diameter gas line will connect the existing 6" line at Mellus Street to the existing 3" line at Court and Thompson Streets. A pending arrangement between the City of Martinez and the Contra Costa Water District would allow the construction of one 18" water main under the Pine Street Diversion and Court Street. Unless this arrangement is completed, two new lines, 18" and 12", will be constructed to continue the existing double system on Pine Street.

i. Miscellaneous

i. Medical Services

The County Hospital provides medical services to the existing main jail. Patients are transported to the Hospital, located at 2500 Alhambra Avenue, as they require services.

A different method of health care is suggested for the proposed Detention Facility. It is proposed that County medical staff be permanently assigned to the Facility to provide medical services at all times. This proposed service is discussed in Chapter 2, Project Description of the Background Report, and in the project description section of this report.

ii. Community Facilities

Community facilities are located near the proposed Detention Facility which would provide a variety of services for visitors to the Facility. Many types of commercial businesses, including restaurants, banks, drugstores, and retail shops are located on or near Main Street within a few blocks of the Facility site. Most motels in Martinez are on Alhambra Avenue within three miles of the site. There are several parks within walking distance of the proposed Facility, including the Martinez Regional Shoreline Park, which is currently being developed jointly by the City of Martinez and the East Bay Regional Parks District. Several churches are also within walking distance of the site.

j. Estimated Utility Service Costs

The following is a tabulation of estimated monthly and annual service costs for utilities serving the proposed County Detention Facility. It should be emphasized that all figures are based on estimated amounts of utility usage at current service charges. Some figures, particularly for natural gas and fuel oil usage, are less accurate estimates, as the usage cannot yet be accurately determined due to the immature state of building design, and service costs are expected to markedly increase in the next few years. Specific utility discussions should be consulted to determine the relative accuracy of each estimation.

TABLE 11

Estimated Utility Service Costs

<u>Utility</u>	<u>Monthly</u>	<u>Annual</u>
Sewer	\$3220	\$38,640
Water (Bottled water) ¹	1340 (2000)	16,080 (24,000)
Natural gas ² (Fuel oil) ¹	1590 (4160)	19,050 (49,890)
Electricity	10,970	131,630
Telephone	2250	27,000
Television and radio	175	21,000
Fire protection ³	-	-
Solid waste disposal	<u>370</u>	<u>4,440</u>
TOTAL	\$19,915/month	\$238,940/year

¹The estimates for bottled water and fuel oil are not included in the totals.

²Natural gas estimates cover only the use of gas for heating. Other uses (laundry, kitchen) have not been estimated.

³No service charge for fire protection due to the fact that the County is not a taxpayer.

4. Circulation and Parking (Background Report Chapter 16)

a. Roadway Network

Located on the north shore of Contra Costa County, Martinez is served by one interstate and one State highway. Both of these highways are fully developed freeways in the Martinez area. Operating conditions are generally good. SR 4 has no periodic congestion at all near Martinez, although congestion during peak hours of recreational travel weekends is quite common on I-680.

There are three principal arterial streets that connect the central Martinez and Civic Center areas to the regional highways. These are Alhambra Avenue (one-way couplet with Berrellessa Street at the north end), Pacheco Boulevard-Pine Street, and Marina Vista. Alhambra Avenue is the major through street with the side streets controlled from south of SR 4 north to Escobar Street. At Escobar all approaches must stop. The prevailing speeds are in the 30-35 miles per hour range.

Due to discontinuities in the rectangular street grid caused by Alhambra Creek, there are only four east-west streets which connect Alhambra Avenue to the Civic Center. Green, Ward, Main and Escobar Streets are all two lane two-way facilities. Main Street is also the major downtown street, therefore through traffic to the Civic Center primarily uses the other three. Escobar Street is also the major access between north Martinez and I-680.

Local access and circulation in the vicinity of the Civic Center is provided by a rectangular grid of streets. North-south streets are Las Juntas Street, Court Street, Pine Street and to a lesser extent, Willow Street and Grandview Avenue. East-west streets include Marina Vista, Escobar Street, Main Street, Ward Street, Green Street and, again to a lesser extent, Thompson Street and Mellus Street. The streets described as lesser are involved primarily in on-street parking or minor parking lot access. They do not connect major movements. Ward Street and Mellus Street are the major access streets into the East Hillside Neighborhood area.

Most streets in the Civic Center vicinity are 36 to 38 feet wide curb to curb with one lane of traffic each way and parking on both sides. The major exceptions are Ward Street, which has no parking on the south side between Pine Street and Grandview Avenue due to inadequate width, and Court Street, which has angle parking on both sides between Escobar and Main Streets.

Escobar Street and Marina Vista form a one-way couplet east of Pine Street. Escobar Street is one-way eastbound with two lanes and parking. West of Pine Street, Escobar Street is two-way, one lane in each direction. Marina Vista is two lane, one-way westbound.

Traffic control in the area consists mainly of stop signs. Between Alhambra Avenue and Pine Street, the east-west streets are through with the exception of the Marina Vista-Ferry Street four-way stop intersection. The intervening north-south streets are all stopped at Marina Vista, Escobar Street, Main Street, Ward Street and Green Street. At Pine Street, all east-west streets south of Escobar Street are stopped. Pine Street itself is stopped at Escobar Street and at Marina Vista. All streets in the Civic Center area are subject to a 25 mile per hour speed limit.

b. Public Transit

Public transportation has a presently small but important role in County Civic Center accessibility. It is now possible to get to the Civic Center from most of the County by transit, by AC Transit, BART express, or Greyhound systems.

The BART express bus services (operated by AC Transit) between Martinez and the Concord BART station (line M) operates hourly from approximately 6:00 a.m. to approximately 11:00 p.m. During peak morning and late afternoon commute periods, time between busses is about half an hour. In all, there are 23 busses from Martinez to Concord and 24 busses from Concord to Martinez each weekday.

Two inter-city Greyhound busses a day each way between San Francisco and Stockton (and intermediate points) are routed through downtown Martinez. Busses from Oakland arrive at approximately 8:50 a.m. and 5:35 p.m., to Oakland busses, depart at 10:40 a.m. and 6:55 p.m. Greyhound provides the only weekend bus service to Martinez.

Within Martinez, two taxi cab companies provide local door-to-door service and service to neighboring communities. For its size, Martinez has a relatively large number of cabs. This may be attributed in large part to the Shell Oil Company wharf and the County and U.S. Veterans hospitals.

c. Traffic Volumes

Automobile traffic volume data was collected for streets in the Civic Center vicinity and on the major arterials accessing the downtown area. The 1976 weekday traffic volumes are shown on Figures 22 and 23. Figures shown to the nearest unit are actual twenty-four hour count data. Volumes shown to the nearest hundred are estimates of daily volume based on the



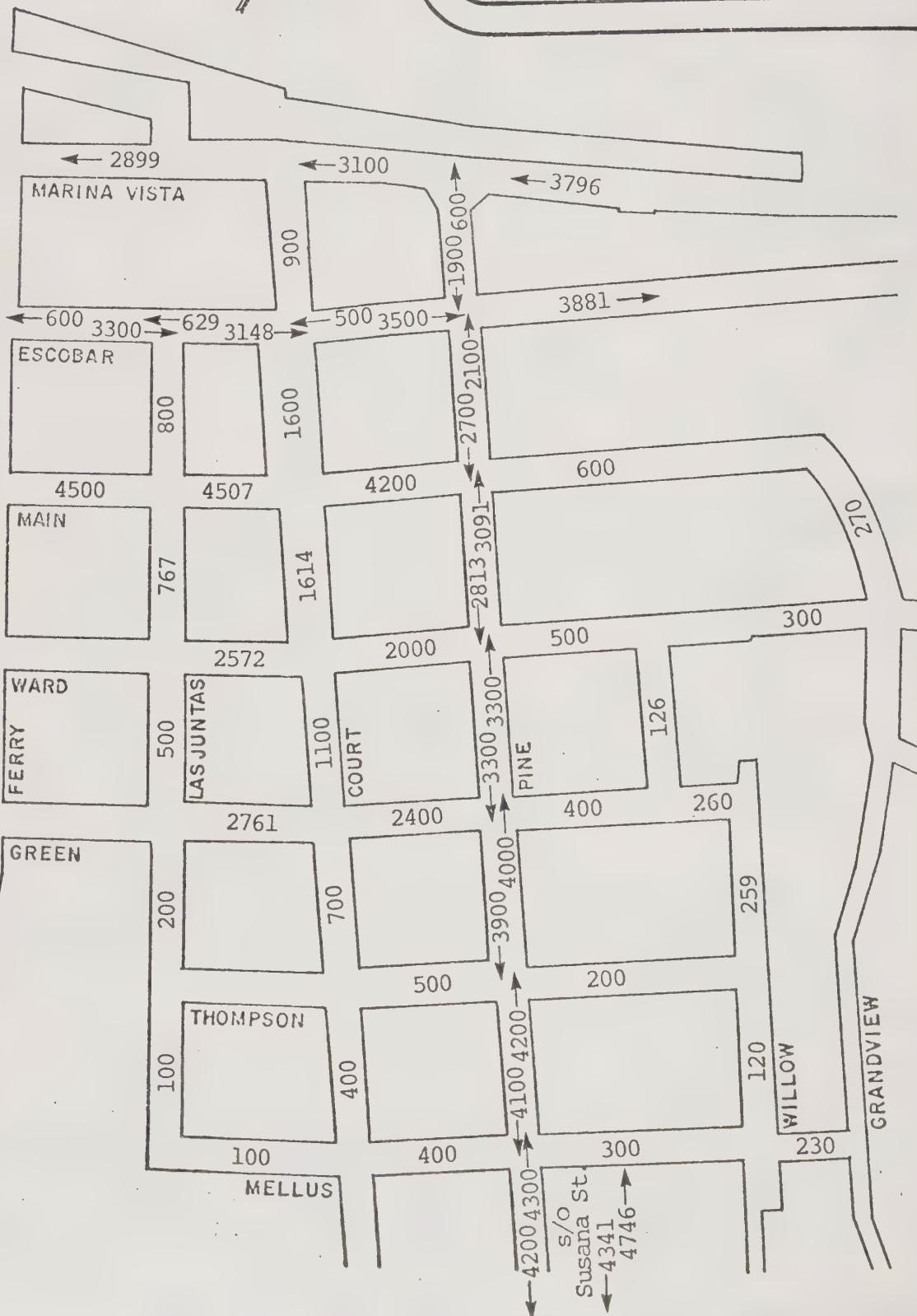
Figure 23

1976 WEEKDAY TRAFFIC VOLUMES

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0 100 200
APPROXIMATE SCALE
IN FEET



manual peak period counts and peak hour relationships derived from the machine counts and consideration of nearby land uses. Volumes are two-way unless indicated otherwise or posted on one-way streets.

The major traffic-carrying arterial is Alhambra Avenue, followed by Pacheco Boulevard, then Marina Vista. This order is not unexpected since Alhambra Avenue serves a number of major traffic generators and a multiplicity of trip purposes. Similarly, Pacheco Boulevard serves a greater number and variety of activities than Marina Vista. The major traffic facility in the Civic Center vicinity is Pine Street. This is followed by Main Street, then Escobar Street and Marina Vista which are generally comparable. These are then followed by Green and Ward Streets, which are also similar. Court Street follows. After Court Street, the traffic volumes on the remaining streets are quite low; well under 1,000 vehicles a day each.

The existing A.M. and P.M. peak hour volumes are shown on Figures 24 through 27. These volumes are representative of the typical commute periods, as they occur during the same time interval. The difference in daily traffic volume on the arterial routes is much less apparent in the peak flow, particularly in the A.M. Typically, the A.M. hour is primarily home-to-work or home-to-school trips. These volumes show a much more uniform distribution approaching the central Martinez area. In addition to the Civic Center, major employment attractors are Shell Oil and the various union hiring halls west of the downtown commercial area. The P.M. volumes, which typically contain a large shopping and service trip element (Bay Area Transportation Study Commission, Bay Area Transportation Report, Berkeley, California, May 1969), are more reflective of the total daily trip pattern.

i. Pedestrian

A major element in peak period traffic flow is pedestrian movement. Figures 28 through 30 show the pedestrian crossing volumes during the A.M., Noon, and P.M. peak traffic hours. The A.M. and P.M. peak volumes clearly show the orientation of pedestrian traffic between the parking areas and the major employment locations centered around the Pine Street-Main Street intersection. The Noon pedestrian flow is heavily oriented between the Civic Center area and the retail and service establishments in the downtown area.

d. Parking

Parking facilities in the Civic Center area consist of off-street parking lots and on-street parking. Lots are provided by the County, the City, and private interests. The

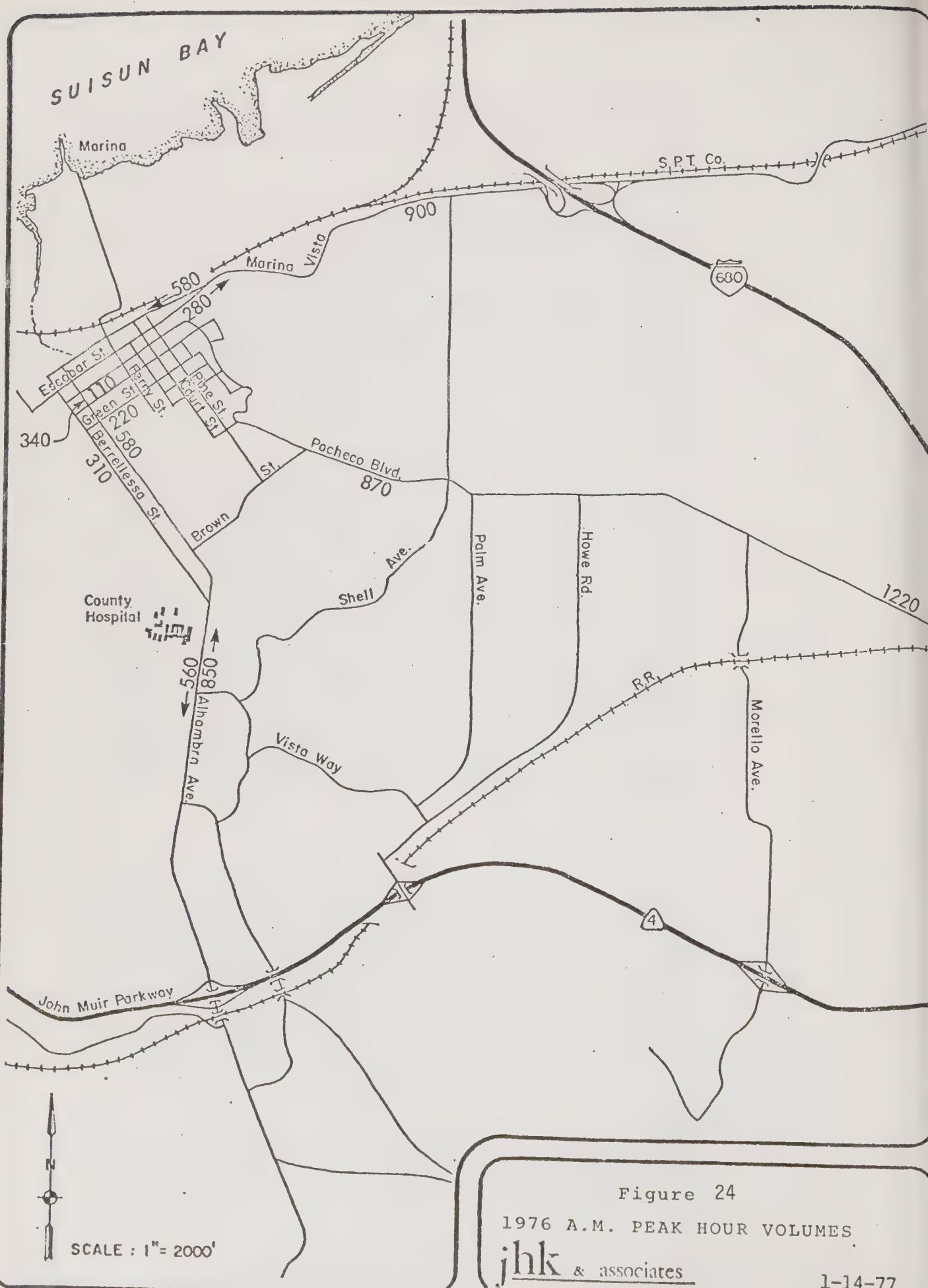


Figure 25

1976 A.M. PEAK HOUR VOLUMES

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0 100 200
APPROXIMATE SCALE
IN FEET

260

MARINA VISTA

320

580

ESCOBAR

50 250

40 240

180 40

280

MAIN

230

220

100

160

100

WARD

150

130

100

60

FERRY

260

210

210

100

GREEN

40

30

30

10

THOMPSON

MELLUS

20

10

170 420
S/O
Susana St.
190
520

WILLOW

GRANDVIEW



Figure 26.

1976 P.M. PEAK HOUR VOLUMES

88

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Figure 27

1976 P.M. PEAK HOUR VOLUMES

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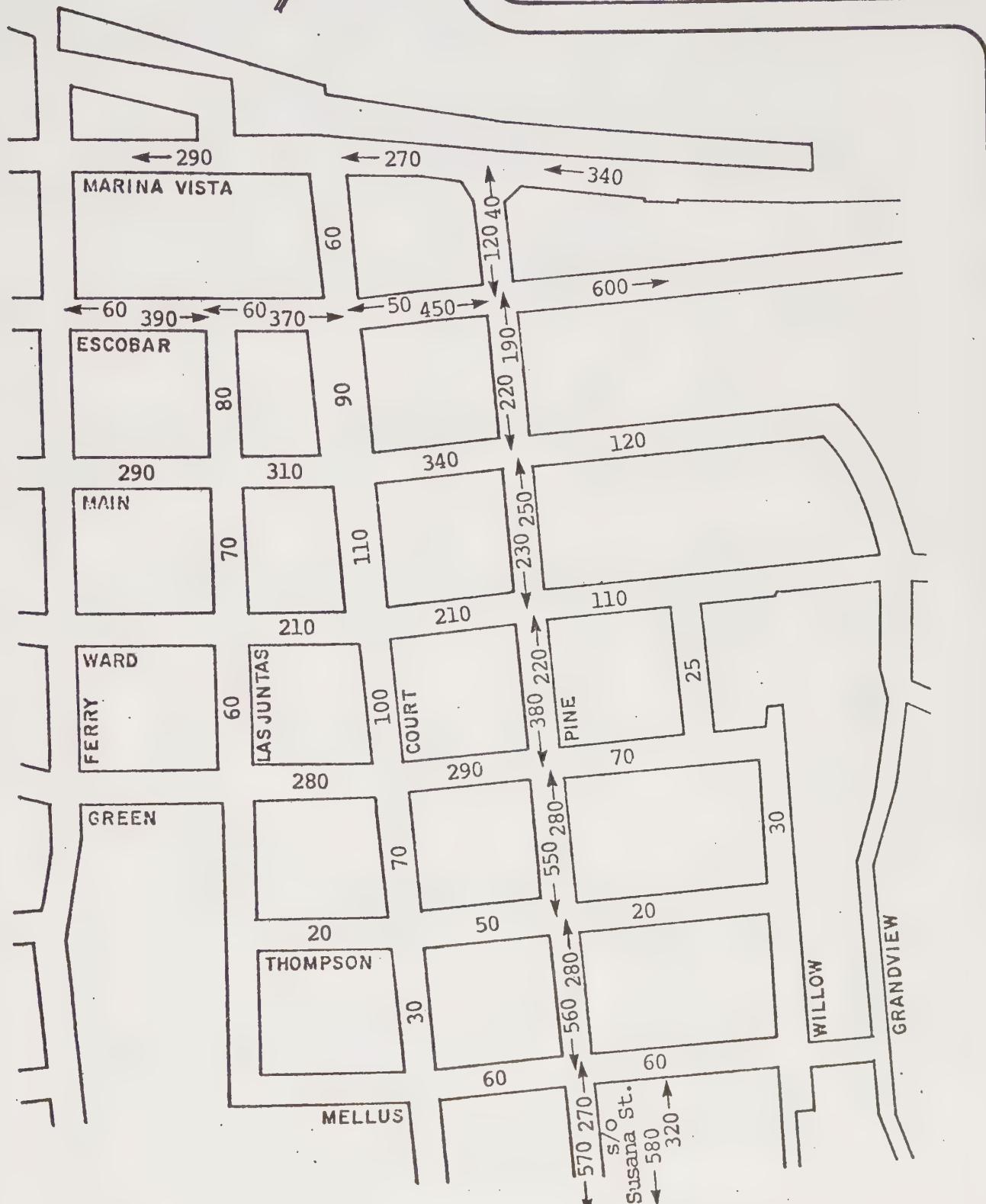


Figure 28

1976 A.M. PEAK HOUR PEDESTRIANS

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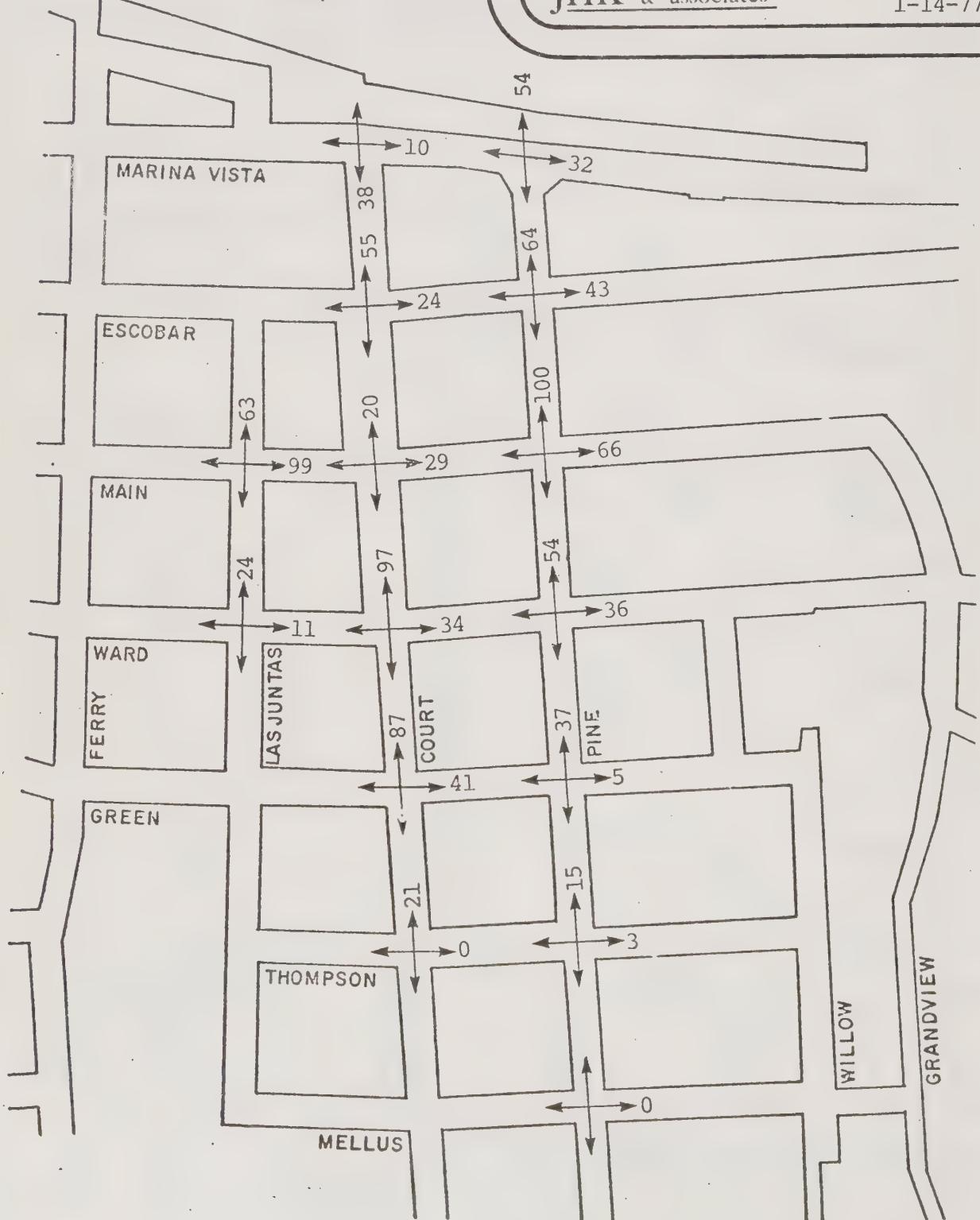


Figure 29

1976 NOON HOUR PEDESTRIANS

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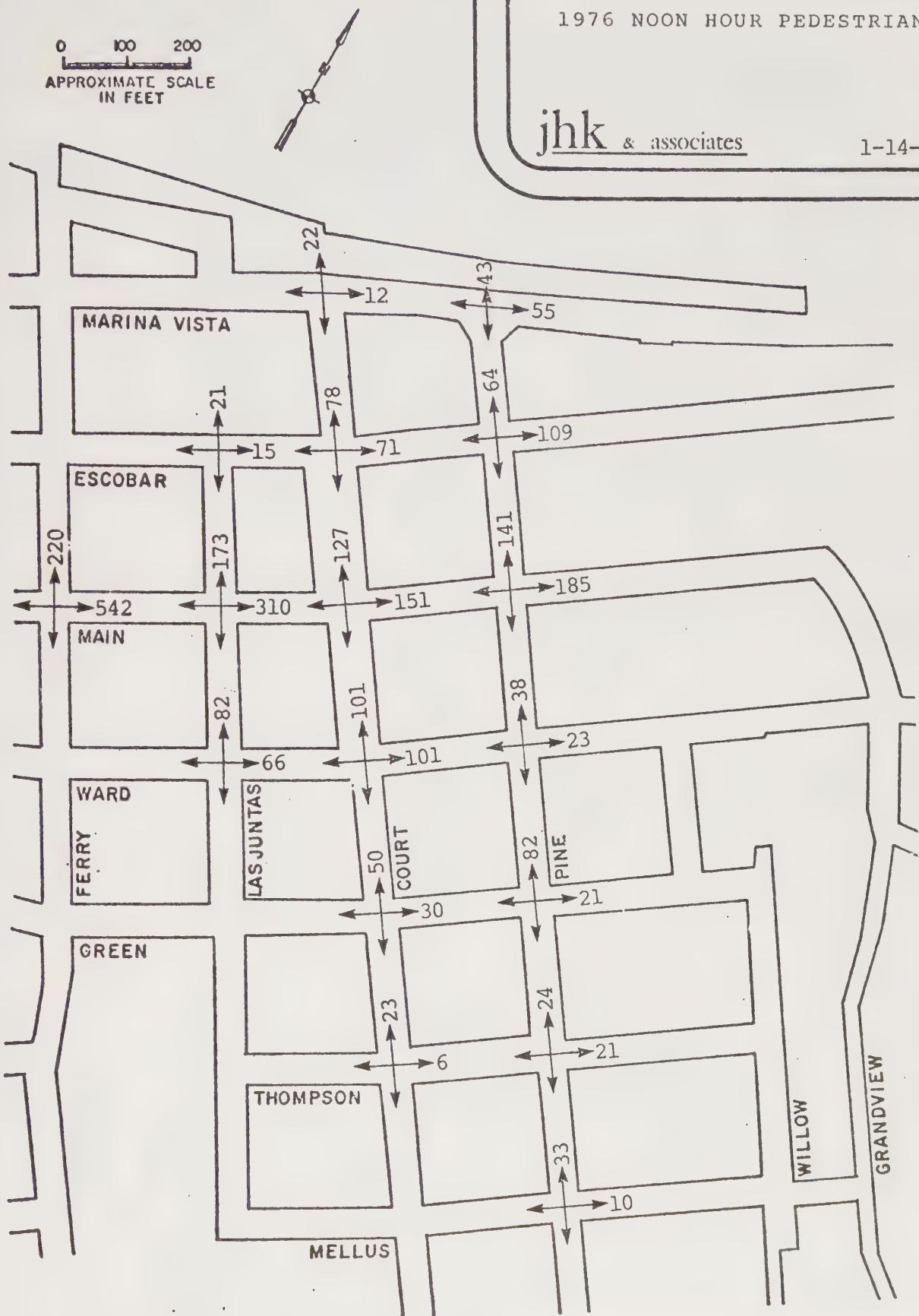
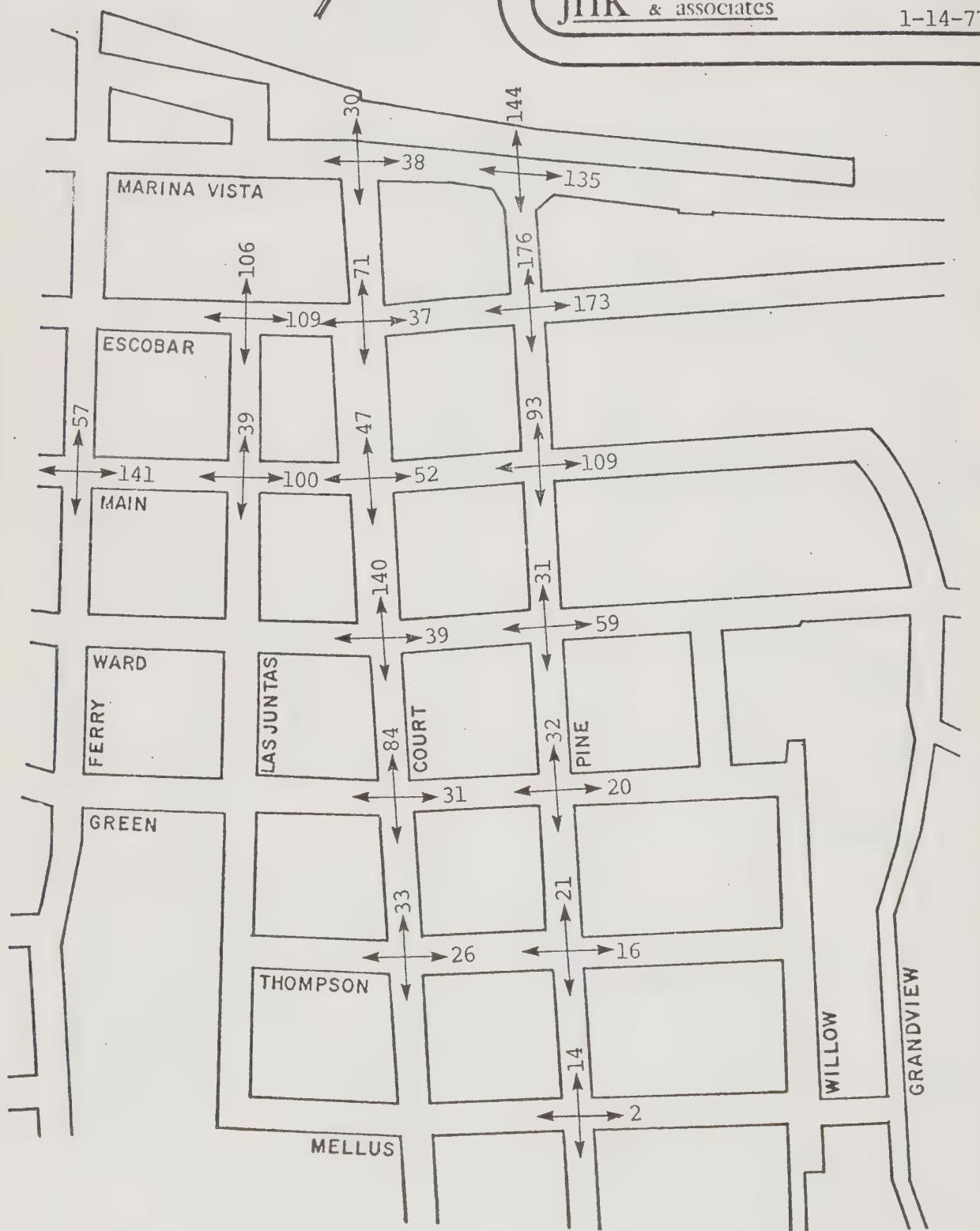


Figure 30

1976 P.M. PEAK HOUR PEDESTRIANS

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distribution of on- and off-street parking is shown on Figure 31. The County maintains approximately 760 off-street parking spaces within the core area, excluding the Motor Pool, Sheriff's Patrol, and the reserved lots on the southeast and northwest corners of the Pine Street-Main Street intersection. There are an additional 180 lot spaces in the western periphery, excluding the Wells Fargo lot on the northeast corner of the Ward Street-Las Juntas Street intersection. Periphery lots include County, City and private. On-street spaces include around 1,720 parking spaces within reasonable proximity (800 to 1,000 feet) of the Civic Center.

Based on the numerical analysis of the parking survey and field observation, JHK found present parking in the Civic Center area inadequate for the current Monday morning peak demand period (Background Report, Chapter 16, p. 46). Parking in the core area is of marginal adequacy during the peak periods in the remainder of the week. These findings assume use of the optimum utilization rates. Improved lots in the core are generally full, however.

Extension of parking into the periphery is significantly greater on Monday compared to the remainder of the week. This was particularly noticeable in the southeast portion along Willow, Green and Mellus Streets. The southerly portion of Las Juntas Street was also heavily utilized.

County employee parking is currently infringing on areas designated for short term parking. This was observed in the 2 hour time limit zones near the Administration Building and in the City parking lot (also 2 hour limit) located on the southwest corner of the Ward Street-Las Juntas Street intersection. The time limit parking near the Administration Building is appropriately situated for short term use by persons with business in the Civic Center and is intended to be reserved for their use.

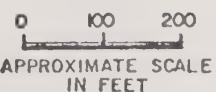
With respect to the City parking lots the situation is less clean-cut. An effect of the westward expansion of County facilities into the downtown area has been a reduction in available short term parking in the commercial area. The City lot located on the southeast corner of Marina Vista and Ferry Street is approximately half reserved. Of the total spaces, 25% are reserved for Community College District staff employed at the adjacent Gordon Education Center. County employees located in facilities on Main Street and on Green Street are parking in the City lot at Ward and Las Juntas Streets. The replacement of commercial establishments by County offices may have altered the demand for parking in the downtown area to the extent that this replacement of short term parking by long term parking is appropriate. There is insufficient information presently available to make that determination.

Figure 31

1976 PARKING DISTRIBUTION

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e. Congestion and Delay

Analysis of current congestion and delay factors was performed for the streets in the Civic Center area and the major arterial streets connecting the Civic Center to the regional highway facilities. In general peak traffic volumes are well within the capacities of the various highway facilities. Various levels of congestion and delay are experienced, however. These are addressed individually with the facilities below.

Traffic movement on Alhambra Avenue is relatively free flowing, even in the peak period. Most of the congestion and delay experienced along this corridor occurs to vehicles attempting to turn left into or across Alhambra Avenue, particularly south of Arch Street where simultaneous north and southbound gaps are necessary to cross. Maximum side street delay occurs during the AM peak on the eastbound off-ramp from SR 4. Congestion at the Alhambra Avenue - SR 4 ramp intersection is prompting some vehicles bound for the Civic Center to divert to Howe Road, where the ramp terminals are signalized. The Howe Road - Pacheco Boulevard intersection is also signalized, allowing for a relatively easy left turn towards central Martinez. On Alhambra Avenue, north of Arch Street, turning and crossing movements are eased by the one-way flow and lower volume.

Pacheco Boulevard is carrying substantial peak hour traffic volumes, for a two lane facility, east of Howe Road. The relatively few intersections along this section aid in keeping the flow smooth; however, congestion frequently develops as vehicles queue behind others waiting to turn left from Pacheco Boulevard. Pavement widening and channelization have been installed at Morello Avenue, the major intersection along this portion of Pacheco Boulevard, to ease through vehicle movement. Volumes are less west of Howe Road; however, geometric constraints near Palm and Shell Avenues adversely affect the smoothness of flow. Capacity of this section is also affected by vehicles turning from Pacheco Boulevard. As with Alhambra Avenue, side street delays may be encountered during peak periods.

Traffic volumes on Marina Vista are well below the capacity of this four lane street. Congestion and delay are associated primarily with the curved alignment east of Escobar Street, truck movement into and out of the Shell Oil loading area and railroad activity at the grade crossing immediately west of Shell Avenue. Interference from

the latter two areas is not frequent. The severe alignment reduces speeds along this section but has little effect on capacity.

Present peak hour traffic volumes in the Civic Center area are below street capacities. Congestion and delay are associated primarily with parking maneuvers and conflicting vehicle or pedestrian streams. These are characteristic of streets in central business districts in general and occur throughout the day. They rarely involve more than two or three vehicles. Peak congestion and delay is associated with simultaneous large conflicting vehicle and pedestrian movements through controlled intersections. Those movements facing stop signs are delayed and the uncontrolled movements flow relatively freely.

Short term congestion and queuing (a line of stopped vehicles) occur at the height of the PM peak period (approximately 5:00 p.m.) with occasional jamming of intersections on Pine Street south of Escobar Street by northbound vehicles. Such conditions rarely last for more than ten minutes, however. This transient congestion is caused by the sudden release of a large number of employees at one time. The intersection approach currently experiencing the greatest delays and queue length buildup is northbound Pine Street at Escobar Street. At this intersection Pine Street is stopped, Escobar Street is uncontrolled. The major movement from Pine Street is the northbound to eastbound right turn. At this location the right turn requires a longer than typical gap in opposing flow (eastbound through on Escobar Street) to be accomplished comfortably because of the uphill grade east of Pine on Escobar. The heavy pedestrian movements here during the peak (hourly rate 430 east-west and north-south) also adds to the delay.

Short queues approaching Pine Street develop on the east-west streets south of Escobar Street as the parking lots empty. These clear very rapidly. Queues also develop on Green Street and Ward Street westbound at Alhambra Avenue, again due primarily to the traffic control. Outbound movement on the major arterials is relatively free flowing. There is little delay once vehicles access the arterial system. In general, what little peak congestion exists is related primarily to the concentration of traffic activity in a short period of time over a small area. The level of delay experienced is minimal involving a small number of intersections. Overall there is no significant traffic problem in the Civic Center at present.

5. Plans, Ordinances, Policies (Background Report Chapters 4, 19, 23 and 24)

a. Introduction

State guidelines provide that Environmental Impact Reports prepared under the California Environmental Quality Act (CEQA) address the relationship between public plans and development policies. These policies are typically contained in the General Plans (defined later) and related special purpose plans of local units of government; however, other documents and the plans of other levels of government also may be relevant. The purpose of this section is to identify the plans and policies associated with the proposed Contra Costa County Detention Facility, and to indicate how they relate to the project.

The primary focus is government plans dealing with physical development subjects such as land use, circulation, and facilities in combination with one another. These are often termed "general," "comprehensive," or "community" plans. Related plans (or programs) for services are discussed briefly in this section. These include the County's capital improvement plans and specific plans and policies relevant to the project.

There are three additional planning policy considerations that are important to evaluating the proposed project. One is that the Detention Facility is a County project proposed for a location in an incorporated city, Martinez. This situation involves the provisions of the plans of two jurisdictions, the partially conflicting objectives of two different kinds of local general-purpose government (a city and a county), and ambiguous legal and moral questions of one unit of government's obligations to another government. The second policy consideration is that the termination of the former "Detention Center" plans made obsolete a considerable body of prior planning decisions. The third policy consideration is that the contents and uses of government plans have changed during the long history of the project, as public attitudes and objectives have changed, resulting in lags and gaps between some government plans and the characteristics of the current project. These considerations will be discussed in the course of reviewing the several applicable plans.

This section will cover, in order, the County Civic Center Plan, the County General Plan, the Martinez General Plan, regional agency plans, County capital improvement plans, and detention facility standards.

b. Land Use (Development) Plans

i. The 1963 Contra Costa County Civic Center Plan

The County Civic Center Plan (Contra Costa County Civic Center Plan of 1963) provided the basis for the civic center land use policies in the 1963 County General Plan and the City of Martinez' 1964 General Plan. Adopted in principle by the Board of Supervisors in 1963, it has endured as the County's general policy for civic center development to the present time. In 1975, it was officially re-affirmed as Board policy in connection with the former "Detention Center" project, when the Board observed, "....the 1963 Civic Center Master Plan is, and has been, its policy guide for County development there and...the plan still provides a suitable and adequate basis for evaluating construction proposals..." (Resolution 75/440). Since it has not been rescinded at this writing (January, 1977) it remains in effect, but many of its proposals are either obsolete or will be if the Detention Facility project is built.

There are two main reasons for the plan's longevity in unchanged form: history and its legal status. The first is the more important. The plan was commissioned in 1962 at a time when the County government had only recently committed itself to staying and expanding in Martinez by the decision to build the 12-story Administration Building. The Civic Center Plan was prepared to relate future County physical plant expansion to the Administration Building and the existing public buildings, including the Main Jail, Courthouse, Finance (old courthouse), and Health building, as well as the U.S. Post Office and City Library.

The next round of construction contemplated when the Civic Center Plan was adopted was to be for new courts and a new jail. However, controversies intervened to the extent that the "next round" has evolved into the present Detention Facility proposal. The most significant change that has occurred in a physical sense in over a decade is that the County has acquired most of the land within the Civic Center area demarcated in the Civic Center Plan and converted much of it to permanent and temporary parking and office use.

The second reason for the Civic Center Plan's longevity is its legal status, or more accurately, its lack of particular status under ordinance or statute. The plan was adopted in principle by the Board of Supervisors as its own policy and honored over the years by use and reference within the County government, but it was never adopted as part of the County

General Plan or other kind of plan provided for in County ordinances or State statutes. If the Civic Center Plan had been made part of the County General Plan, there is a likelihood that it would have been amended to better accommodate proposed jail projects.

The resulting plan concept called for a composition of old and new public buildings, both low and tall in height, located on an elongated "superblock" that extended along the base of Martinez Ridge from Marina Vista to Mellus Street (see Figure 32). The superblock was to be created by transforming Pine Street, and streets crossing it, into a pedestrian mall or plaza. To provide adequate circulation, a circumferential street system was planned using Court Street on the west and Willow Street, extended, on the east. Parking was to be accomplished in lots and structures located on the periphery of the superblock. The plan recommended a new jail and sheriff's facility at the location where the previous "Detention Center" was proposed.

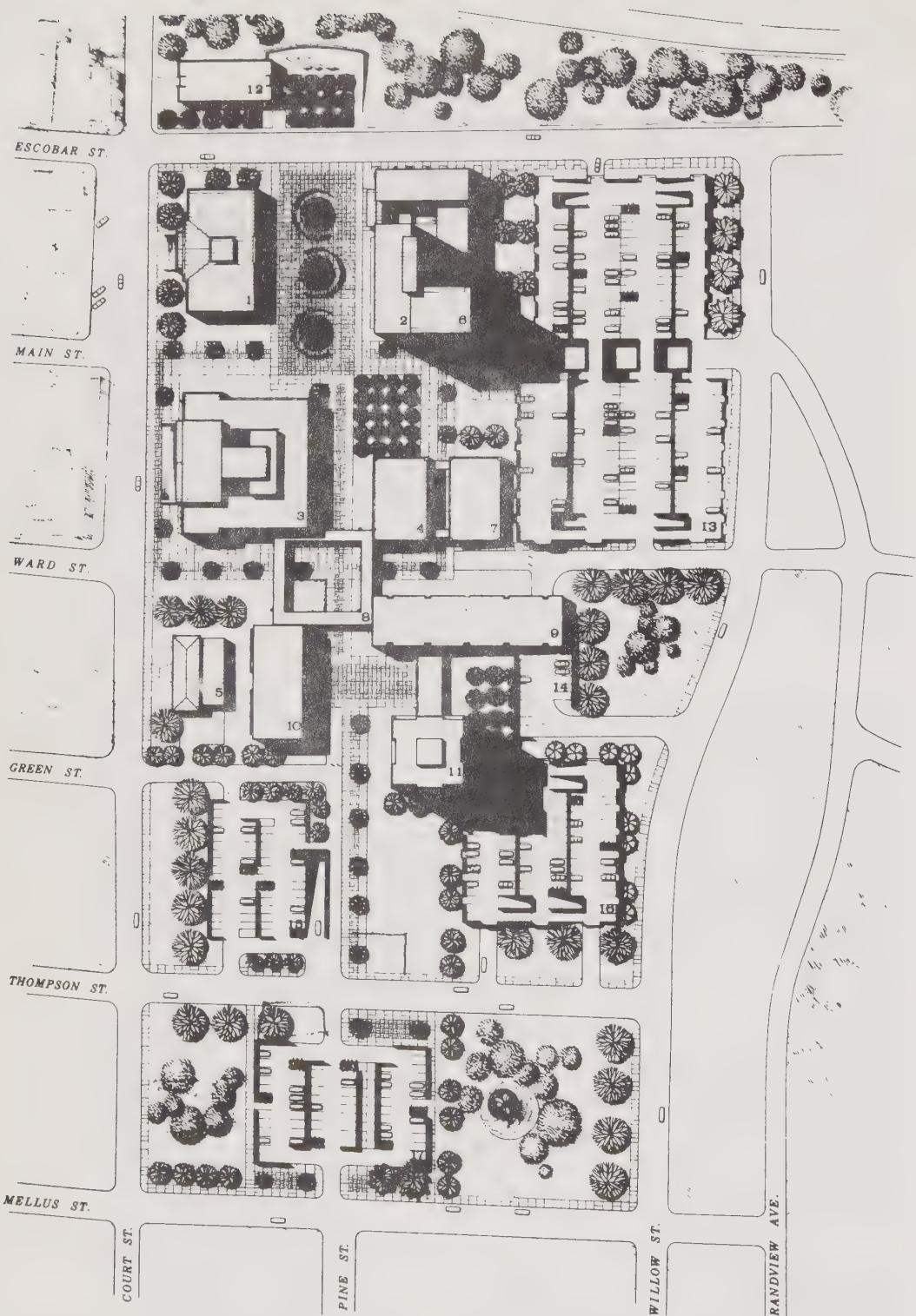
The Civic Center Plan concept was typical of large building complexes designed in the 1960's (or the 1970's for that matter) for large units of government. Not so typical, however, was the proposal to build such a complex in a city of the small size and building scale of Martinez.

The 1975 EIR found the previous "Detention Center" project to basically conform to the Civic Center Plan. The present Detention Facility project can be better said to conform in a limited or partial sense. It pertains to uses (jail and courts) addressed in the plan, and it was designed in reference to the Civic Center area demarcated by the Plan. Its setting in a proposed "superblock" to be created by diverting Pine Street traffic to Court Street north of Mellus Street is in keeping with the concepts of the original plan. However, the building is too large and differently placed to conclude that it unequivocally conforms to plan, and it would preclude the realization of some of the plan's proposals, such as a future administration building at Green and Pine Streets.

Interestingly, the current project now proposes a Courts Addition east of the Post Office in almost the same location that was proposed in 1963.

ii. The County General Plan

The General Plan is a city or county's basic policy for growth, the use of land, and development within its jurisdiction. It is required by state law, and must be adopted by the local governing body. It consists of several parts, largely mandated by statute, some of which deal with individual sub-



CONTRA COSTA COUNTY CIVIC CENTER

SITE PLAN DEVELOPMENT TO 1985

EXISTING BUILDINGS

- 1 Court House
- 2 Administration
- 3 Hall of Records
- 4 Health Department
- 5 Post Office

1963

PROPOSED BUILDINGS

- 6 Administration Expansion
- 7 Health Addition
- 8 Elevated Corridor
- 9 Jail & Sheriff
- 10 Courts Addition
- 11 Administrative Services
- 12 Jr. College Administration

PROPOSED PARKING AREAS

- 13 Three Levels - 725 cars
- 14 One Level - 15 cars
- 15 Two Levels - 210 cars
- 16 Three Levels - 300 cars
- 17 One Level - 50 cars

0 100 200 300 FEET

jects and are called elements, and some of which are multi-subject sub-area plans covering particular geographic areas within a jurisdiction. The Contra Costa County General Plan consists of a number of components, all adopted by the Board of Supervisors, but those that are directly applicable to the Detention Facility project are the Land Use, Circulation, Noise, Safety, and Seismic Safety Elements.

The areas covered by general plans are not mutually exclusive. At one level, cities regularly plan for adjoining unincorporated areas anticipating that they will be annexed, while counties practice "sub-regional" planning by taking in cities in their plans. The County General Plan shows broad categories of land use (etc.) within Martinez and other cities in order to help account for county-wide conditions and trends. These forms of extra-territorial planning convey no new powers and one unit of government always has primary jurisdiction. Existing and proposed County facilities, such as the County Civic Center, are accounted for in the County's General Plan, whether they are located in incorporated or unincorporated territory.

A local government agency proposing to undertake a public project is required by Government Code to submit its proposal to the planning agency having jurisdiction in the project area for an advisory review of its conformance with the applicable general plan. This review requirement is called "mandatory referral." Its purpose is to ensure that general plans receive consideration when local governments make improvements and build facilities. It is also a means of insuring that agencies and local governments coordinate with one another. The "mandatory referral" requirement, however, only compels coordination, not conformance. A government usually has the ability to override its own general plan to approve its own projects, or to overcome a negative finding by the planning agency of another unit of government.

The Detention Facility project will be submitted to the City of Martinez for a "mandatory referral" review as well as to the County Planning Commission. The relationships between the proposed project and the County General Plan are discussed in this section and the project's relationship to the Martinez General Plan is discussed in the following section.

The Detention Facility appears to readily conform to the Land Use Element of the County General Plan. The applicable plan component here is the Land Use and Circulation Plan of 1963. (Most of the County's Land Use Element has been updated since 1963, especially in the unincorporated area. The particular area under discussion here, however, is a residual area that was not formally updated.) Its plan map

(see Figure 33) shows an area of "Public" category land use in the County Civic Center area (defined in the Civic Center Master Plan) where the proposed project would be located. The Detention Facility is a public, or governmental use. It should be noted, however, that the area so designated is highly generalized in the original plan, and the Land Use Element neither sub-categorizes the Public classification, nor provides specific height, bulk or density criteria for it. This does not cast doubt on the project's conformance, but rather indicates that its conformance is based on very general grounds.

The Circulation Element of the County General Plan is relevant to the Detention Facility project in the sense that the plan's recommendations in the Martinez area are so general that the project cannot be said to disagree with it. The Circulation Element shows an arterial road facility on the Pacheco Boulevard-Pine Street corridor leading to the Civic Center. At its level of generality in the plan, it would not matter if this corridor were diverted to Court Street, as in the present project, or kept on Pine Street.

The Safety Element pertains to the Detention Facility and other County projects wherever they are located within Contra Costa County. The main public safety considerations for this project are flooding and fire. In the first case, the Facility will be built above the 100-year floodplain, which is also a requirement of the Federal Flood Protection Act of 1973. (Refer to the Hydrology and Water Quality section of this report for a detailed account of this subject.) Fire protection is a special problem in high-occupancy and involuntary occupancy buildings.

The present project is expected to be preferable to the previous "Detention Center" project (a 6-story, windowless design) because of its lower height, modular construction, and ventilation characteristics. The architect is giving attention to the use of secured outdoor spaces for evacuation and high-volume smoke exhaust systems in addition to customary sprinkler and fire hose installations. There are no major gas or oil transmission lines in the immediate vicinity of the project. The attention given in the design of the project to inmate safety in the event of a fire would be expected to constitute compliance with the Safety Element.

The Seismic Safety Element mainly requires that geologic studies be conducted in areas susceptible to faulting or ground failure, and that high occupancy buildings be designed to protect lives and "critical structures" be designed to remain functioning in the event of earthquakes of character-

Figure 33
CONTRA COSTA COUNTY GENERAL PLAN
(1963 LAND USE AND CIRCULATION PLAN)



LEGEND

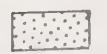
Land Use

 Commercial

 Public

 Single Family-High Density

 Heavy Industrial

 Multiple Family-Medium Density

 Major Arterial

istics probable for the location. In satisfying the first requirement, the Public Works Department contracted for a special fault study (the 1975 EIR for the previous project disclosed the possibility of an earthquake fault in the vicinity of the Civic Center) and the Planning Department contracted for geologic study as part of the environmental assessment of this project (see Soils and Geology Section).

iii. The Martinez General Plan

The County government, as previously noted, must submit the Detention Facility proposal to the City of Martinez' Planning Commission for review of the project's conformance with the City's General Plan. The General Plan in this instance is the City's revised plan of 1973. Its land use and transportation policies in the vicinity of the Civic Center are summarized in Figure 34.

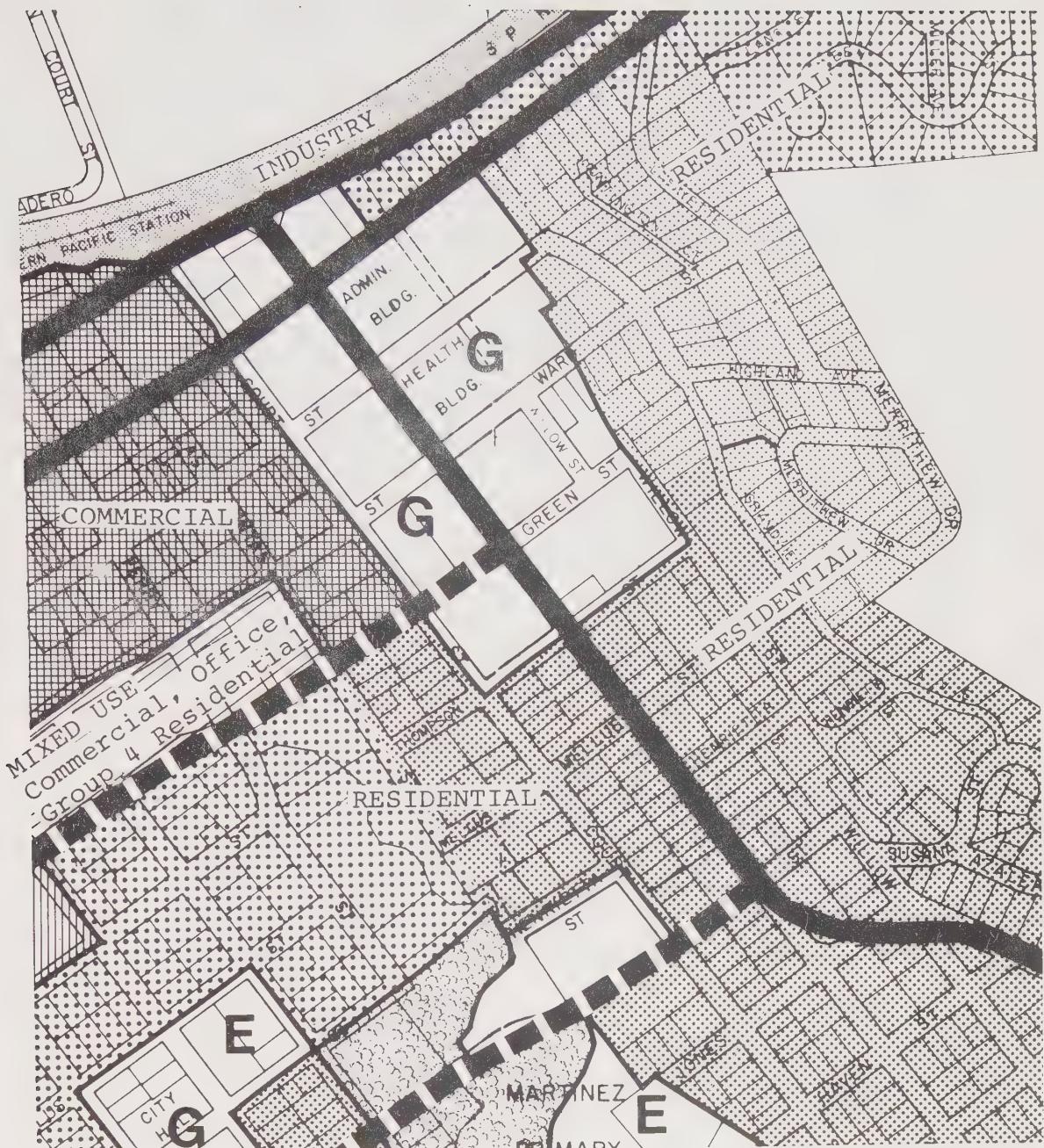
The 1973 version of the City's plan is a comprehensive revision of its former (1964) plan, and is contained in a new plan document entitled Martinez General Plan. Among its changes, the new plan subdivided the City and its environs into several planning areas.

Martinez has provided for the County Civic Center by classifying the area roughly bounded by Marina Vista, Court, Thompson, and Willow Streets as Community Facilities-Governmental on its plan map. Surrounding this public enclave are various categories (densities) of Residential use to the south and a combination of Industrial (railroad) and Open Space on the north. Except for the Open Space area, which provides for a recently approved regional park, the plan's land use designations almost entirely account for existing development.

Access to the Civic Center area in the plan is to be provided by arterial street facilities on Pine Street/Pacheco Boulevard and the combination of Escobar Street and Marina Vista. Complementing the arterial-class streets, the plan provides for collector street facilities (minor arterials) on Green and Susana Streets west of Pine Street.

The changes Martinez made to its General Plan in 1973 not only updated its contents but accomplished a shift in the City's development policies. For the older area of the City in and around the central business district and County Civic Center area, the new plan substituted policies emphasizing the preservation and conservation of existing development for policies in the previous (1964) plan that were more favorable to growth and redevelopment. The 1973 plan stated:

Figure 34



CIRCULATION

Arterials ■■■
(2 lanes
each way)

Collectors ■■■

**COMMUNITY
FACILITIES**

Governmental ■■■
Schools ■■■

**OPEN SPACE,
PARKS AND
RECREATION**



**CONTRA COSTA COUNTY
DETENTION FACILITY**

Martinez General Plan

"Broad scale clearance programs aimed at eliminating commercial blight and 'importing' substantial numbers of new residents into Central Business District cannot be justified in market terms and would tend to impair the very qualities which distinguish Martinez from other commercial centers."

The consequences of these new policies were more conservative proposals for land use expansions and circulation facility improvements throughout the central area of the City.

In the Civic Center area, the 1973 plan made several specific changes. First, the "Government Center" area previously identified in the land use element was reduced in size by reclassifying the blocks between Mellus and Thompson Streets and another area between Escobar and Marina Vista Streets to residential land use. Second, the circulation element proposals calling for the connection of Pine to Court Streets and the extension of Willow Street, both to provide for a circumferential circulation system around the Civic Center, were expressly deleted. And, third, the evaluation of appropriate height, bulk and setbacks for County buildings was defined as corresponding to the established character of the community (later operationally defined as conforming to Government Facilities zoning, and certain requirements of adjoining residential zoning districts). (City of Martinez)

It is probable that the proposed Detention Facility will be found to be consistent with the Martinez General Plan in terms of the primary characteristic of land use. The Detention Facility proposal is for a public facility housing traditional County courts and detention functions to be operated by the County government. However, the new Detention Facility project has features that probably do not conform to specific provisions of the City's plan.

The proposed project appears to differ from the Martinez General Plan in the character of its building, in its incursion into the planned residential area between Mellus and Thompson Streets, and in the diversion of Pine Street to Court Street. With respect to the first item, the design "style" of the building resembles neither existing public or privately owned buildings in the area, and the bulk of the building with a floor area of 186,000 square feet is larger than even the County Administration Building. The area between Mellus and Thompson Streets is indicated for residential use by both the City's General Plan and its zoning ordinance. The project requires diverting Pine Street to Court Street, but this linkage was expressly diverted from the plan's Circulation Element during the 1973 revisions.

Several other attributes of the project may be found to not conform to the City's general plan or comply with its zoning ordinance when the project is examined in detail. Its height, about 46 feet, is taller than would be allowed in some adjoining zoning districts. Its setbacks approximately comply with the city's requirements around most of the building's perimeter, but it appears that the building's proximity to the Post Office property lines will create technical violations of the Zoning Code. There are other differences, but they all point to the fact that the proposed Detention Facility is a unique building with characteristics and features that do not conform to provisions of the City's General Plan and zoning ordinance.

The differences between the City's General Plan and the proposed project are not necessarily conclusive. Policy is always in a state of evolution. In the case of the Detention Facility project, both local residents and City officials have participated in the design process that was initiated in 1976 and is on-going at this writing. It is possible that the project is acceptable to the City, and in keeping with its interests, despite differences with particular provisions in its General Plan and zoning ordinance. If this is the case, the City can indicate its agreement to the County, and later amend its general plan and zoning.

As previously noted, the City cannot compel the County to conform to either its plan or zoning. The County must submit its proposal to the City for an advisory review but can proceed after taking this step. In practice, however, the County probably would try to reach an agreement with the City. This is to say that agreement between the two local governments is a form of public policy, and especially pertinent in implementing public projects.

c. Regional Agency Plans

The plans of several regional agencies cover the Martinez area but their recommendations are not directly applicable to the Detention Facility project.

The Association of Bay Area Governments' Regional Plan does not contain detailed land use, circulation, or facilities recommendations that would affect the project. Because no state or federal grants are involved in the construction of the Facility, the project is not required to be reviewed by ABAG in its regional clearinghouse capacity and or the provisions of the Federal Office of Management and the Budget Circular A-95.

The Bay Conservation and Development Commission's Bay Plan covers the Martinez waterfront adjacent to the County Civic Center, but the Civic Center is too far inland to require their review.

The Metropolitan Transportation Commission's (MTC) Regional Transportation Plan does not affect local street modifications and improvements of the level involved in the project. No road funds subject to MTC review are proposed to be used in the project.

The East Bay Regional Park District's plans do not cover the County Civic Center. The adjoining Martinez Regional Shoreline Park, however, is an East Bay Regional Park District facility which is being developed in accordance with that district's overall plan and a specific development plan (Martinez Waterfront Land Use Plan) adopted by the District and the City of Martinez.

In addition to the above, it is acknowledged that these agencies, and others, will be given the opportunity to review this project's EIR. It is also acknowledged that several special districts, including the major utilities, have plans that indirectly affect the project.

d. County Capital Improvement Plans

The typical city or county carries out numerous capital improvement projects each year. These may range from extensions of utility lines to the construction of major public buildings. Many such projects have significant impacts upon other programs and projects because they often compete for a limited amount of funds. The following briefly traces the history of the County's detention facility financing and its relationship to overall County capital improvement planning (See Chapter 24 of the Background Report to this EIR for a more extensive discussion).

In December of 1966, the Board approved plans and cost estimates for the Hall of Justice complex. The preliminary estimate was \$8 million, of which \$4,500,000 was for the detention facility. The cost of this complex exceeded the total sum expended for all fixed assets during the previous several years. It was, therefore, apparent that the resources for County plant acquisitions would be dominated by planning for criminal justice facilities, the major portion of which would be the central detention facilities. Given the need to continue to finance other capital programs, the Board of Supervisors decided to finance the detention facilities with a \$10,250,000 bond issue. Subsequently, in June of 1967, the voters of Contra Costa County defeated this bond issue. Since the bond issue failed, the Board of Supervisors voted

an additional five cents per one hundred dollars tax override for the 1970-71 budget. The additional revenue from this tax would be placed in reserve to provide for the construction of the Detention Facility. The following year, the Board of Supervisors raised this tax override to ten cents per one hundred dollars and retained this rate for the following two fiscal years.

With the advent of revenue sharing in 1973, the Board of Supervisors allocated \$15,000,000 of this new source for the Detention Project with the remainder of the approximately \$20,000,000 available for the project from the Accumulative Capital Outlay fund and approximately \$573,000 from General Fund revenues which were utilized early in the project for planning.

While expenditures for County capital improvements did continue from 1966 to the present, they were severely limited by the long-range financing needed to complete the Detention Facility. Until the financing of the Detention Facility was finalized, only the most essential capital improvements projects could be considered except for those with special grant or categorical funding. In spite of this, over \$17 million were spent during 1966, to 1976 for plant acquisition.

Even though the bond issue for a new criminal detention complex was defeated by the voters of Contra Costa County, the need for improving the conditions in the County's existing detention facilities continued. To alleviate these problems, the County was required to initiate interim improvements. In 1972, the County spent approximately \$155,000 to convert one of the Rehabilitation Center dormitories into a maximum security detention facility which provided beds for about 60 inmates. In 1973, at a cost of approximately \$2 million, a new detention wing and classroom facilities were constructed at the County's Juvenile Hall in Martinez. The following year, 1974, \$700,000 was spent to construct a Residential Treatment Center, also at the Juvenile Hall. There were three criminal justice projects in 1976, one of which was a \$700,000 remodeling job on the County Courthouse in downtown Martinez. Another project that year provided for the construction of a \$500,000 gymnasium at the Juvenile Hall facility. Finally, in May of 1975, a new Work Furlough Center was opened in Richmond for sentenced men. The Work Furlough Center was constructed with \$1 million Law Enforcement Assistance Administration (LEAA) federal grant funds.

The difficulties in capital improvements programming by the County which resulted from delays in resolving the "jail" issue also inhibited the preparation of County facilities

plans. This does not seriously affect programming for the current Detention Facility project, but future projects (including additional criminal justice facilities) are generally not well provided for in the County's adopted plans. It may be appropriate to develop a new Civic Center plan and revise the County General Plan to include more information on facilities. In conjunction with this effort should be the development of a formal comprehensive capital improvements plan.

e. Detention Facility Standards

In July, 1973, the State Board of Corrections, State of California, adopted Minimum Jail Standards (MJS) for local detention facilities. Under the MJS, the proposed Contra Costa County Detention Facility is a Type II facility. Detention in such facilities may be indefinite during trial and up to one year upon commitment. Consequently, the MJS are mandatory standards for the Detention Facility as a Type II facility.

Other than the MJS, no clear consensus exists among penologists on standards for correctional facilities and programs. However, the major philosophical trend among penologists suggests that detention facilities should "foster social growth or behavioral improvement" by developing both structural design and inmate programs which establish an environment of normalcy.

In keeping with both this philosophical trend among penologists and the mandatory MJS, the Contra Costa County Board of Supervisors on March 2, 1976 adopted Board Resolution No. 76/201 on the Detention Facility specifying, in part, that

Determinations regarding design will be based on our policy to acquire a facility that is able to be adapted to changes in the criminal justice system, on recognized national guidelines, including but not limited to Standard 11.1 of the National Advisory Commission on Criminal Justice Standards and Goals (with the exception of those items which can only be applied to Federal and State correctional institutions), State law and State regulations....

The commitment of the Board of Supervisors requires that the analysis of the Detention Facility consider two types of standards: 1) the mandatory MJS which must be viewed as minimum requirements and 2) national guidelines which must be given significant consideration.

The standards and guidelines of the following organizations were reviewed:

State Board of Corrections - State of California (MJS)
National Advisory Commission on Criminal Justice Standards and Goals (NAC)
National Sheriff's Association (NSA)
National Clearinghouse for Criminal Justice, Planning and Architecture (NCCJ)

The following is a brief review of the project's compliance with the various standards and guidelines of the above organizations (Please refer to Chapter 4 of the Background Report to this EIR for a more extensive review).

i. Capacity Standards

The proposed capacity of the Detention Facility is 383 inmates, which satisfies all standards except those of the NAC. Although the project exceeds the NAC's 300 person recommendation, the establishment of small-scale residential clusters seems to accomodate the NAC's desire for minimal regimentation and repressive hardware.

ii. Residential Area Standards

The CCCDF plan calls for separate intake housing (in which inmates can be detained until classified for general housing purposes), ability to separate inmates on the basis of sex, sentencing status, severity of offense, degree of criminal sophistication, and potential danger, use of individual rooms of 70 square feet (with toilet, lavatory and window) and the grouping of rooms into clusters (the largest having 51 rooms). The facility satisfies most of the applicable standards, with the major exceptions being that the NAC recommends a room size of 80 square feet and 26 rooms per cluster, and the NCCJ recommends 30 to 40 persons per cluster.

The Detention Facility dining/day room space exceeds the NCCJ recommendation that this area relate to a maximum of 12 rooms. However, the project plan allows for partitioning of the area which will allow smaller group arrangements.

iii. Medical Service Standards

The Detention Facility services plan satisfies the MJS.

The proposed plan calls for coordination with and referral to local medical institutions, programs for surgery, mental health treatment, and a detoxification program both during confinement and after release.

The CCCDF meets most of the advisory standards of the NAC, the NSA, and the NCCJ.

iv. Visiting Program Standards

The proposed visiting program plan meets the MJS and NSA standards. Visiting hours (in the evening on a daily basis and regularly scheduled hours in the daytime) go beyond the NAC recommendations of 14 hours per week but is in keeping with the NCCJ recommendations for few limitations.

v. Library Program Standards

The proposed plans call for the establishment of a complete library on the Detention Facility premises itself. The library will include a legal collection (which will be expanded until the basic collection recommended by the American Association of Law Libraries is attained), a general collection including reference works, and audio-visual equipment.

The CCCDF plan clearly goes beyond the MJS and the advisory standards in recommending the establishment of a library within the detention center.

vi. Counseling Program Standards

The Counseling Program will emphasize counseling in the area of crisis intervention due to the shorter length of incarceration. The program plan calls for provision of two rooms for counseling purposes, active solicitation of services from community agencies and groups, and a staff person to manage the function and see that there is 24 hour coverage (preferably by volunteers) at the intake work station.

Inasmuch as the proposed Detention Facility will largely be one of rapid turnover, the types of useful services which may be provided are limited. However, the Detention Facility plan does provide for crisis intervention and counseling for alcohol and drug cases. Crisis intervention, in keeping with the NAC, NSA and NCCJ recommendations, will be available initially to all inmates.

vii. Recreation Program Standards

The proposed recreation plan, which consists of five components, provides a variety of relaxed, semi-active and active recreation opportunities for residents. The recommended locations and physical separations for recreation activities are in keeping with the NCCJ guidelines which are the most thorough of the advisory standards.

The only area in which the project does not meet standards is in required space for the exercise area. The MJS mandates that 1500 square feet be allocated for the outdoor exercise area. Discussions with representatives of the State Board of Corrections, however, have been held and the representatives have indicated that the plan may be acceptable. The acceptance is based on the total program advantages to be achieved through the use of the decentralized outside exercise areas located near each residential cluster.

viii. Educational Program Standards

In planning for educational counseling and three types of educational instruction (academic, vocational, socially-oriented), the Detention Facility complies with the mandatory and advisory standards.

ix. Conclusions

As noted, the proposed Detention Facility standards are mandated to be in compliance with the MJS. In all but one case, the CCCDF meets or surpasses the MJS. The one exception is the 1500 square feet required for the outside exercise area; but the State Board of Corrections has indicated that the use of the decentralized outside areas near each residential cluster may be acceptable.

The project plan also meets most advisory standards. The primary exceptions are: 1) the NAC capacity standard of 300 persons, and 2) the NAC room size standard of 80 square feet. In each instance, the NCCJ representatives have indicated their acceptance of the project proposals due to the total facility program.

In a letter received from the NCCJ Project Review Administrator, who had reviewed the proposals, the overall facility standards were acknowledged to be in keeping with recognized national guidelines:

The overall impression from this review was that the schematic proposals were certainly well within advanced techniques and practices as defined by contemporary standards for detention facility design.

Consequently, the Board of Supervisors' mandate that the proposed Detention Facility meet both the MJS and recognized national guidelines seems, generally, to have been achieved.

6. Soils and Geology (Background Report, Chapter 7)

a. Soils

On September 9, 1976, under contract with the County, the firm of Woodward-Clyde Consultants submitted a "Preliminary Soils and Siting Analysis" for the proposed Detention Facility. The following discussion is based upon that report.

As in the earlier studies (1955, 1971), the soils overlying bedrock on the two northeast blocks consist of a surface crust or layer of very stiff brown silty clay about 10 feet thick; this clay is dry, hard and capable of providing good foundation support. Below about 10 feet the soils become wet medium dense silts and sands mixed with clay, and groundwater is encountered at about elevation +14 to +18 MSL (Median Sea Level). Below about 30 feet, dense clayey gravels occur for a few feet before the claystone bedrock is encountered (as shown in Figure 35).

The upper 10 feet of soils are excellent materials for support of spread footings (proposed for this project), however the next 10 to 15 feet of wet silty soils are moderately compressible under the loads exerted by spread footings. Since there is only a gradual change in depth to bedrock subparallel to the site surface, differential settlement of spread footings supported near grade should be negligible.

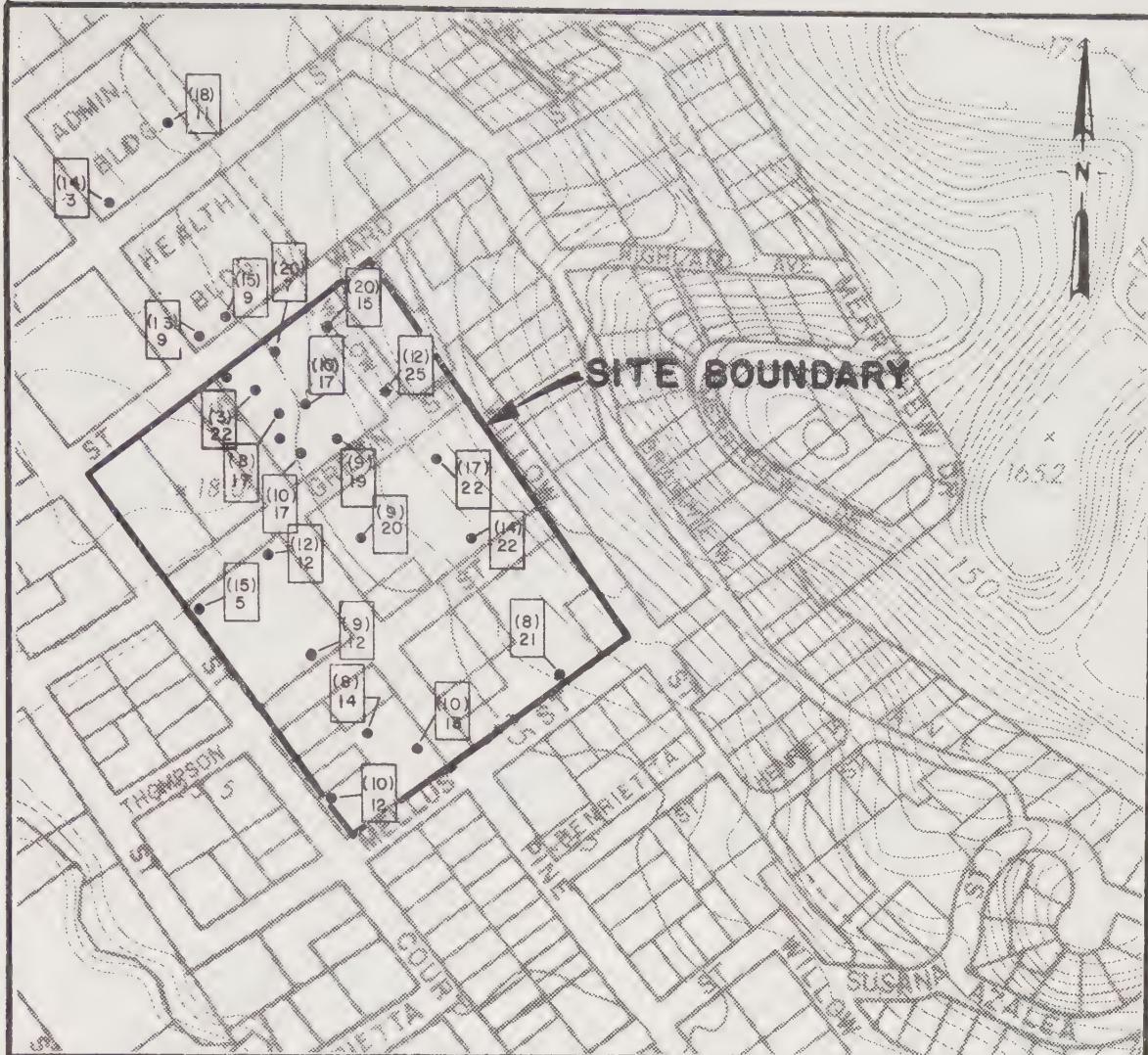
The bedrock elevation contours of 0 feet, -15, -30 and -45 MSL were then plotted on the 6 block area as shown on Figure 36; these rock contours are the top of the hard grey claystone and are likely accurate to at least plus or minus 4 feet. They indicate that the variation of the top of bedrock is least pronounced on the two northeasterly blocks and greatest on the original jail block studies in 1971.

The soils on the project site are of the Botella Series. The properties and limitations of this series are characterized by very slow runoff, none or slight erosion hazard, moderate shrink swell potential and moderately slow permeability. These are Class 1, prime agricultural soils and are used for homes, some dryland walnuts, pasture and volunteer hay (Soil Survey of Contra Costa County, September 1974, U.S. Department of Agriculture, Soil Conservation Service).

b. Geology

i. Regional Geologic and Seismic Setting

The following analysis is based on a February, 1977, report prepared for the Detention Facility EIR effort by Woodward-Clyde Consultants.



EXPLANATION

- Depth to compressible silty clay
- Elevation on silty clay
- Location of borehole for previous study

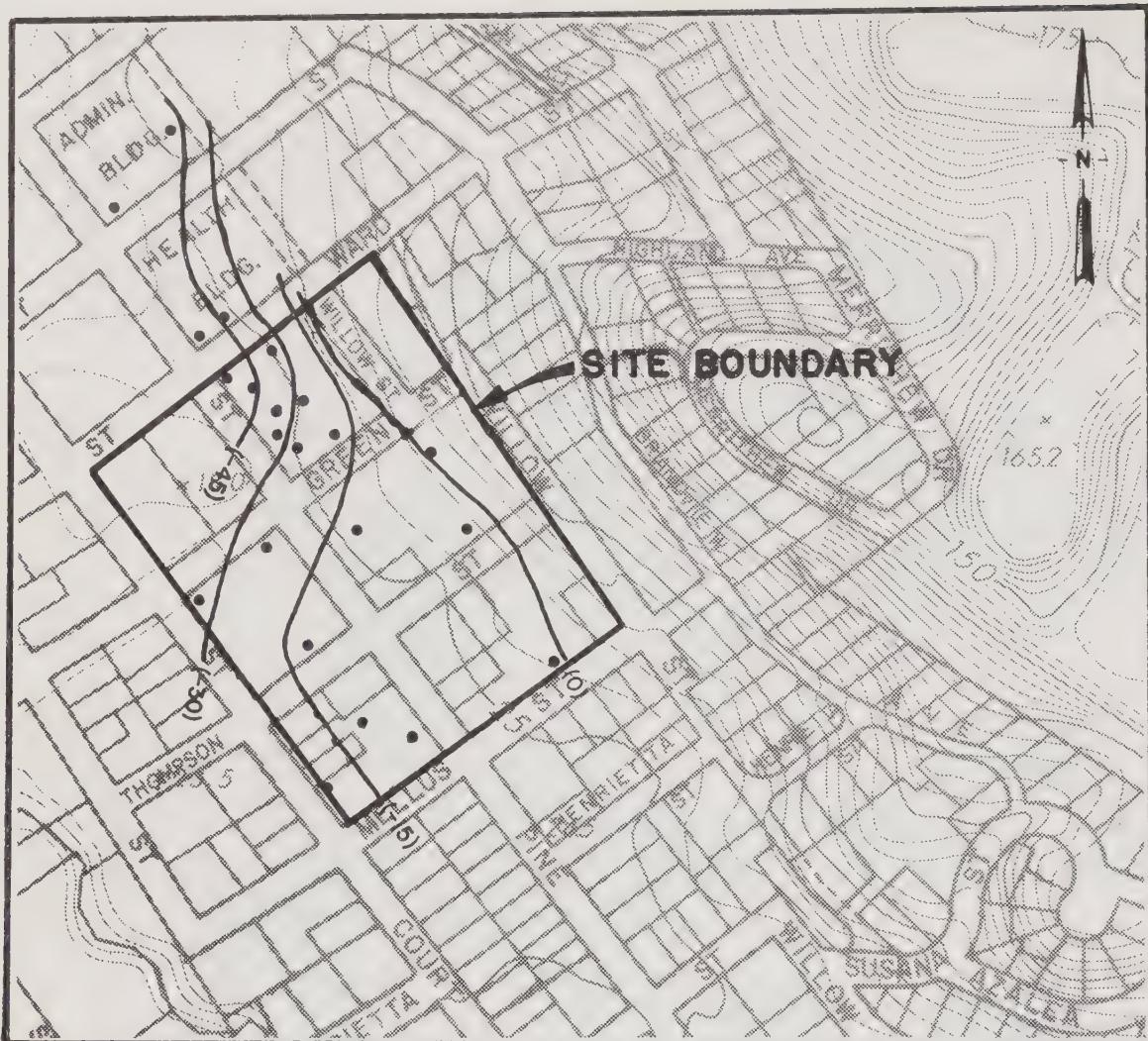


DISTRIBUTION OF SILTY CLAYS
CONTRA COSTA COUNTY DETENTION FACILITY

Martinez, California

Project No. 70082A
WOODWARD-CLYDE CONSULTANTS

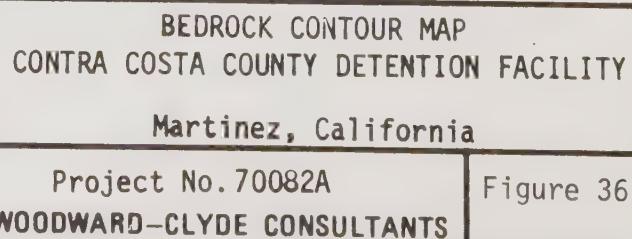
Figure 35



EXPLANATION

- Borehole data location

~~150~~ Contour on bedrock surface



The proposed project site, Martinez, and the rest of the San Francisco Bay Area are located within an active seismic region. The San Francisco Bay Area has been the location of strong earthquakes in the past and the same level of activity is expected to continue in the future.

ii. Regional Faults

There are five regional faults known to be active, which have the potential for generating strong earthquakes which could affect the Martinez area. These are: the San Andreas, located 30 miles to the west; the Hayward, located 11 miles to the west; the Calaveras, located 18 miles to the south; the Concord, located 3 miles to the east; and, the Green Valley, located 6 miles to the northeast. With the exception of the San Andreas, these faults are shown on Figure 37. Two of the above faults are located in central Contra Costa area and are discussed below.

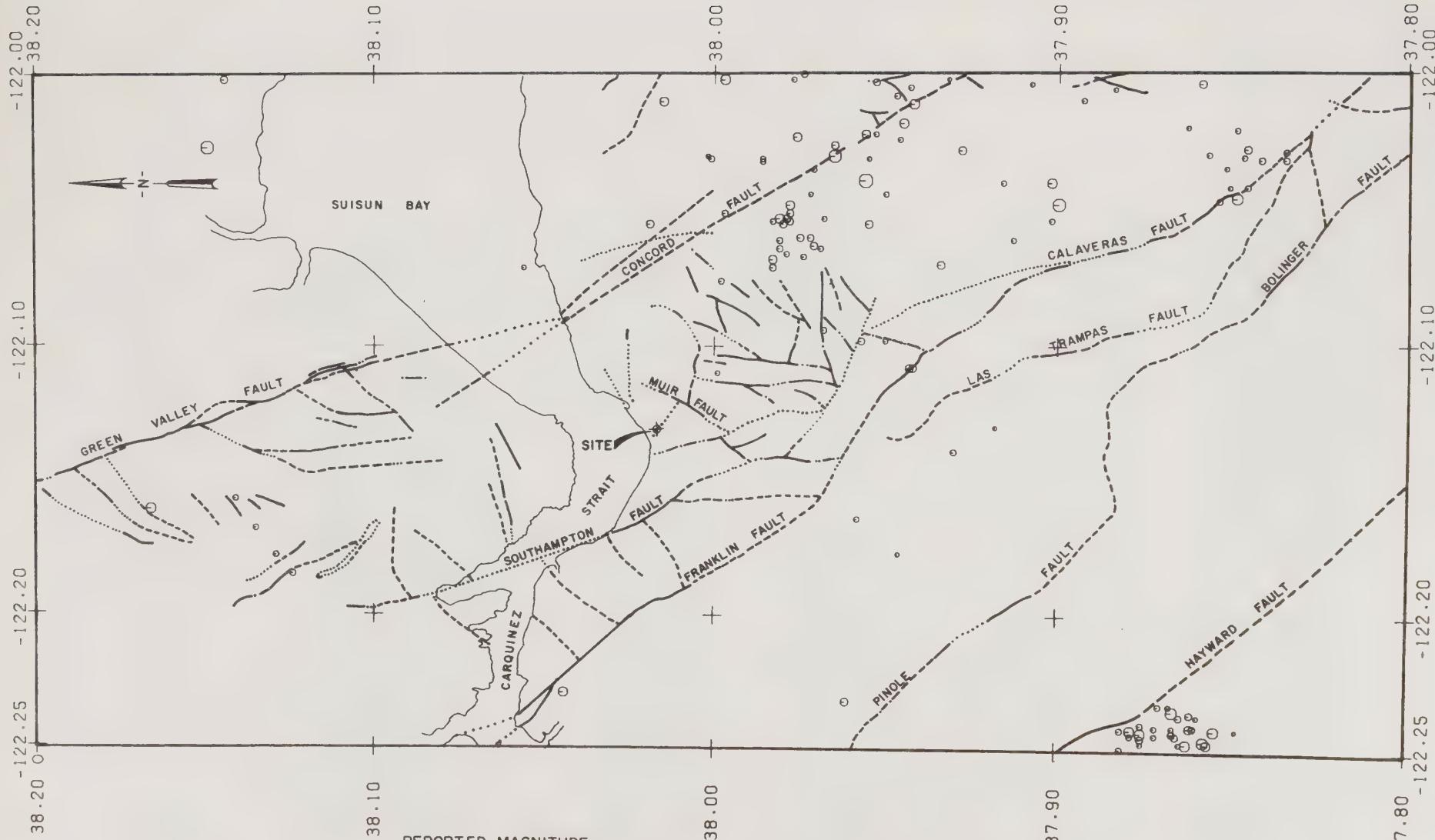
The Calaveras Fault

The Calaveras fault branches from the San Andreas fault south of Hollister, and its known active portion extends to the vicinity of San Ramon (south of Walnut Creek) approximately 18 miles south of the project site. The location of the northern extension of the Calaveras fault (Figure 37) is not well documented.

The Concord Fault

Poland (1935) reports that the Concord fault, located 3 miles to the east was first discovered in 1919 during a lawsuit concerning the purported effect of the removal of large quantities of water in the Ygnacio Valley. The results of pumping tests ordered by the court showed that a fault traversed the Town of Concord, forming a groundwater barrier between aquifers in Clayton Valley and those of Ygnacio Valley. Poland (1935) states that the barrier was created by fault displacements that sealed gravel channels against impervious clays, and that the groundwater barrier extends within a few feet of the surface. He further states that the surface expression of the fault is shown by an irregular fault-line scarp along the west side of Lime Ridge and by the presence of an elongated lagoonal depression formerly known as Galindo Lake. That lake has long since disappeared due to a general lowering of the water table.

The Concord fault has most recently been studied by Sharp (1973), of the U.S. Geological Survey. Sharp's report cites evidence suggesting recent right slip due to fault creep, which indicates that the Concord fault should be considered active. Sharp states that the evidence suggests that the rate of creep has not been constant, and that a period of accelerated creep might have been triggered by a relatively strong earthquake in October 1955.



REPORTED MAGNITUDE

4.0
3.0
2.0
1.0

MAGNITUDE SYMBOL SIZES ARE SHOWN
ON A CONTINUOUS NONLINEAR SCALE

1 ½ 0 1 2 3 4 MILES

DATA SOURCES

EARTHQUAKE EPICENTERS: U.S. GEOLOGICAL SURVEY (DATA BANK).
FAULT LOCATIONS: SIMS ET AL (1973), CONTRA COSTA COUNTY (1976).

118
REGIONAL SEISMICITY 1969-1973
CONTRA COSTA COUNTY DETENTION FACILITY
Martinez, California
Project No. 70082A Figure
WOODWARD-CLYDE CONSULTANTS 37

iii. Significant Historical Earthquakes

The Martinez area and the project site have been subjected to a number of strong earthquakes during historic time. A paper by Harding (1929) states that the district contiguous to Martinez experienced earthquakes classed as severe, heavy or destructive during the years 1860, 1864, 1865, 1868, 1883, 1888, 1889, 1890, 1891, 1892, 1893, 1895, 1896, 1898, 1902, 1903, 1906, 1919, 1920 and 1924. This list is probably not complete, even for the period covered since Contra Costa County reports (1975a Technical Background Report Seismic Safety Element) that strong earthquakes also occurred in 1861, 1866, 1872 and 1901.

Perhaps the most significant of the earthquakes which have been felt in the Martinez area were those which were generated in the following areas: 1) the San Andreas fault in 1838 and 1906; 2) the Hayward fault in 1836 and 1868; 3) the Calaveras fault in 1861; 4) Vacaville-Winters-Dixon in 1892; 5) Mare Island in 1898; and 6) Concord in 1955.

The most recent earthquake to cause damage in the Martinez area was the Concord earthquake of October, 1955. The epicenter of this earthquake is plotted south of Buchanan field, in the vicinity of the Concord fault. The earthquake had a Richter magnitude of 5.4 and it was felt over an area of 12,000 square miles.

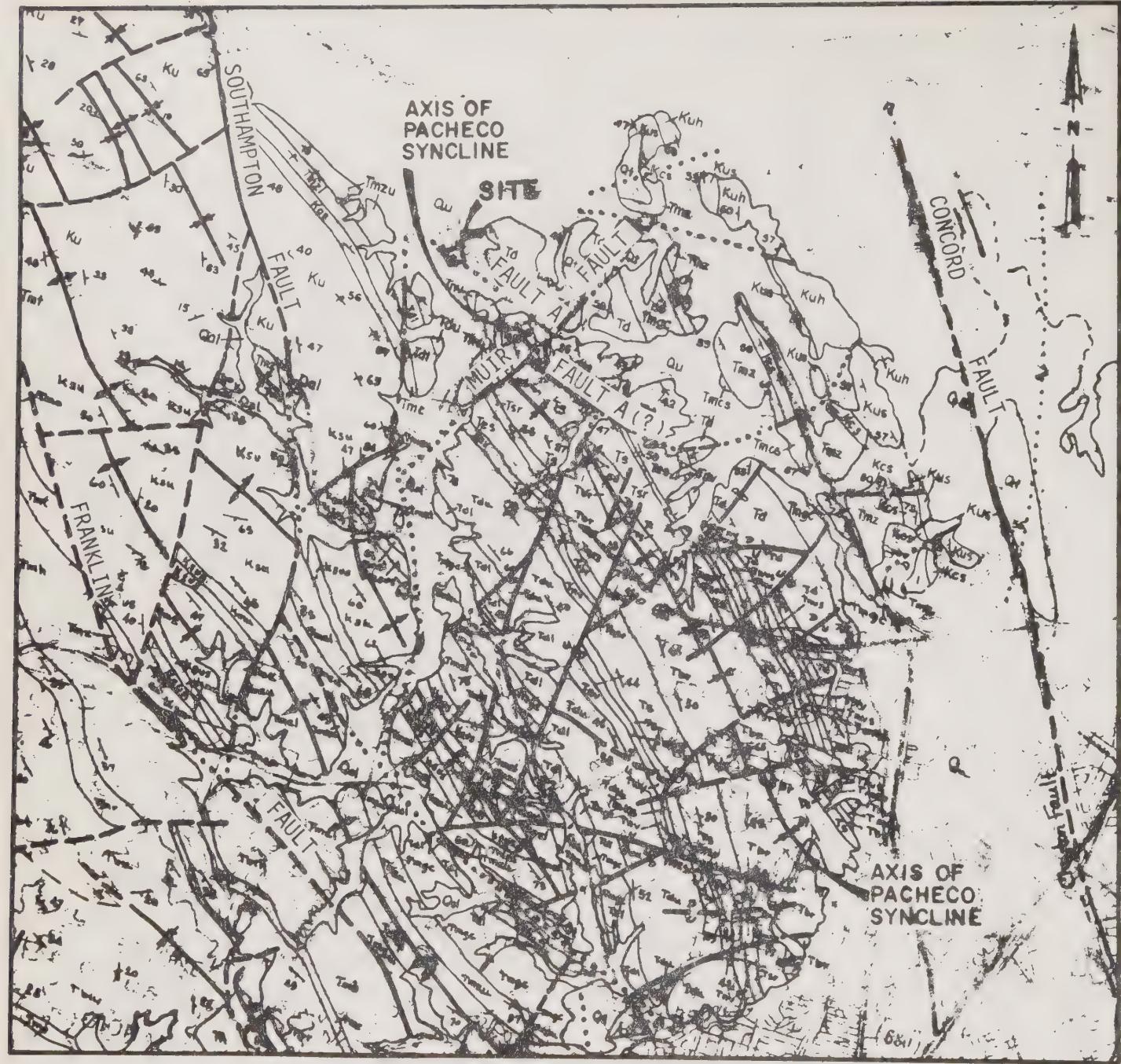
The Coast and Geodetic Survey (Murphy and Cloud, 1957) assigned this earthquake an Intensity of VI on the Modified Mercalli Scale in Martinez, and described the effects there as follows:

"Felt by and frightened all in community. Damage considerable to brick. Considerable damage to the girls' gymnasium in the Alhambra Union High School; a number of heavy 12 x 8 ceiling beams cracked. Building declared unsafe. Fireplace and chimney cracked; plaster cracked. Small objects overturned; knickknacks fell. Old clocks started."

iv. Geologic and Seismic Setting of Martinez

The geologic structure in the Martinez area, as shown on Figure 38, consists of a series of northwest-trending synclines and anticlines (with the Pacheco syncline being most pertinent to the project site), northwest-trending faults, and some northeast-trending faults. Four faults which are representative of the northwest- and northeast-trending faults in the Martinez area (and are most significant to the project site) are shown on Figure 38. These are the Franklin, Southampton, Muir, and Concord faults. These faults are discussed below.

Franklin Fault - The Franklin Fault is located approximately 3 miles southwest of the project site. Saul (1967) described the



EXPLANATION

- FAULT
- AXIS OF SYNCLINE
- AXIS OF ANTICLINE
- AXIS OF OVERTURNED ANTICLINE
- GEOLOGIC CONTACT
- 20 STRIKE AND DIP OF BED
- 65 STRIKE AND DIP OF OVERTURNED BED

3000 0 3000 6000 9000 12000 feet

MODIFIED AFTER CONTRA COSTA CO. (1976)

GEOLOGIC STRUCTURE	
CONTRA COSTA COUNTY DETENTION FACILITY	
Martinez, California	
Project No. 70082A	
WOODWARD-CLYDE CONSULTANTS	Figure 38

Franklin fault as being the western branch of the northern extension of the Calaveras fault. Tolman (1931) indicates that the Franklin fault is active and suggests that it splits near Carquinez Strait, with one trace continuing northward on either side of Mare Island. If this inference is valid the Franklin fault may have been the source of the Mare Island earthquake of 1898. However, the Franklin fault is not considered active by the California Division of Mines and Geology, nor is it reported active by Contra Costa County (1976), Brown (1970) or Jennings (1975).

Southampton Fault - The Southampton fault is located approximately 1 mile west of the site, as shown on Figure 38. This fault was mapped by Tolman (1931) as an "active fault", and has been inferred by Tolman (1931), Poland (1935), and Saul (1967) as being a branch of the Calaveras fault. The southern segment of that latter fault, extending southward from the vicinity of San Ramon, considered to be one of the major active faults of the San Francisco Bay Region. However, unlike the Calaveras fault, the Southampton fault has not been clearly associated with any strong historic earthquakes; and it is not considered active by the California Division of Mines and Geology, or reported active by Contra Costa County (1975a), Brown (1970), or Jennings (1975).

Muir Fault - As mapped by Weaver (1953) the Muir fault is a normal fault with the southeastern block faulted down relative to the northwest block. The Muir fault, located approximately 3/4 mile southeast of the site, (Figures 38 and 39) was inadvertently classified as potentially active by the California Division of Mines and Geology on the basis of work by Sims and others (1973). Sims has indicated that there is no evidence of Quaternary activity and therefore, the potentially active classification will be deleted by the California Division of Mines and Geology.

Concord Fault - The Concord fault, which is located approximately 3 miles east of the site (Figure 38) is considered by some geologists to be a possible northern extension of the Calaveras fault. Evidence for its activity has been well documented by Poland (1935) and Sharp (1973). The central portion of Martinez is shown on Figure 39 to be underlain by Quaternary alluvium which extends southward in a narrow valley. Other portions of the city extend onto the Cretaceous and younger sedimentary rocks which form the surrounding hillsides. The Quaternary alluvium extends well below the present sea level which strongly suggests that the narrow valley was deeply eroded during the "ice ages", when continental glaciation brought about a general lowering of sea level.

Concealed (Buried) Bedrock Fault (Fault A)

A recent U.S. Geological Survey map compilation (Sims and others, 1973) shows a concealed (no alluvial evidence) bedrock fault along, or closely parallel to, the axis of the Pacheco syncline. As shown



EXPLANATION

Modified from Sims et al (1973)

Qbm	Bay mud
Qa1	Alluvium
Qt	Terrace deposits
Tmb	Briones sandstone
Tms	Sobrante sandstone
Tos	San Ramon sandstone
Tems	Markley sandstone
Ten	Nortonville shale
Ted	Domengine sandstone (Tedu, upper unit; Tedl, lower unit)
Tpu	Unnamed Paleocene formation (Tpus, upper unit sandstone member)
Tpm	Martinez formation (Tpmu, upper unit; Tpml, lower unit)
Kus	Unnamed Cretaceous sandstone
Kgus	Unnamed Cretaceous formation

 Geologic Contact
 Synclinal axis
 Fault: dashed where approximately located, dotted where concealed.
 Strike and dip of bed
 Strike and dip of overturned bed



LOCAL GEOLOGY
CONTRA COSTA COUNTY DETENTION FACILITY
Martinez, California

on Figures 38 and 39, this buried fault has a northwesterly trend beneath downtown Martinez and the project site. This fault interpretation is based upon the fact that the geologic contacts between the San Ramon Sandstone, Markley Sandstone and Nortonville shale strike toward the synclinal axis from the south, whereas these rock units are not mapped as being present on the northeastern side of the synclinal axis (see Figure 39). Sims (personal communication, 1976) has advised that the dotted symbol used for this fault is intended to convey the fact that it is an inferred feature of the lowest reliability.

Cooper-Clark & Associates (1974) re-plotted the buried bedrock fault inferred by Sims and others (1973) at a larger scale, and found that the zone within which it might lie crossed the extreme southwestern edge of the project site, which is shown on Figure 40. Subsequently, a preliminary fault study of the concealed fault was conducted by Woodward-Clyde Consultants (1976c) for the project site. That report concludes that there is no evidence with the concealed fault is active or potentially active, but that the fault is probably inactive, and that the fault does not represent a significant hazard or impact to the proposed facility.

v. Local Seismicity

An epicenter plot of recent earthquakes recorded by the U.S. Geological Survey seismograph network is presented on Figure 37. A total of 119 events, with magnitudes in the range of 0.60 to 3.13, were delineated. These epicenter locations were superimposed on a map of reported fault locations in the region surrounding the project. Based on this epicenter plot, the regional seismic activity appears to be principally centered around the Concord, Calaveras, Green Valley and Hayward faults. Scattered activity is also seen between the Concord and Calaveras faults southeast of the project area. No epicenters were plotted in or near the project site. The recent earthquake "swarm" (January, 1977) was located 7 miles to the southwest in the Orinda area.

vi. Bedrock

The boring data indicate that an irregular bedrock surface is present at depths ranging from 16 feet to over 60 feet. This irregular bedrock surface can be visualized on Figure 36. As described on the boring logs (Woodward-Clyde Consultants, 1976a and b; Woodward-Lundgren, 1971) the bedrock consists of clayey sandstones and siltstones, clay shales, and claystones. The color is stated to vary from blue-gray to greenish brown or orange. Due to the proximity of surface exposures of rock mapped as Domengine sandstone, the bedrock has been assumed to belong to that geologic unit. Based on the same data, Cooper-Clark & Associates (1975)



300 0 300 600 FEET

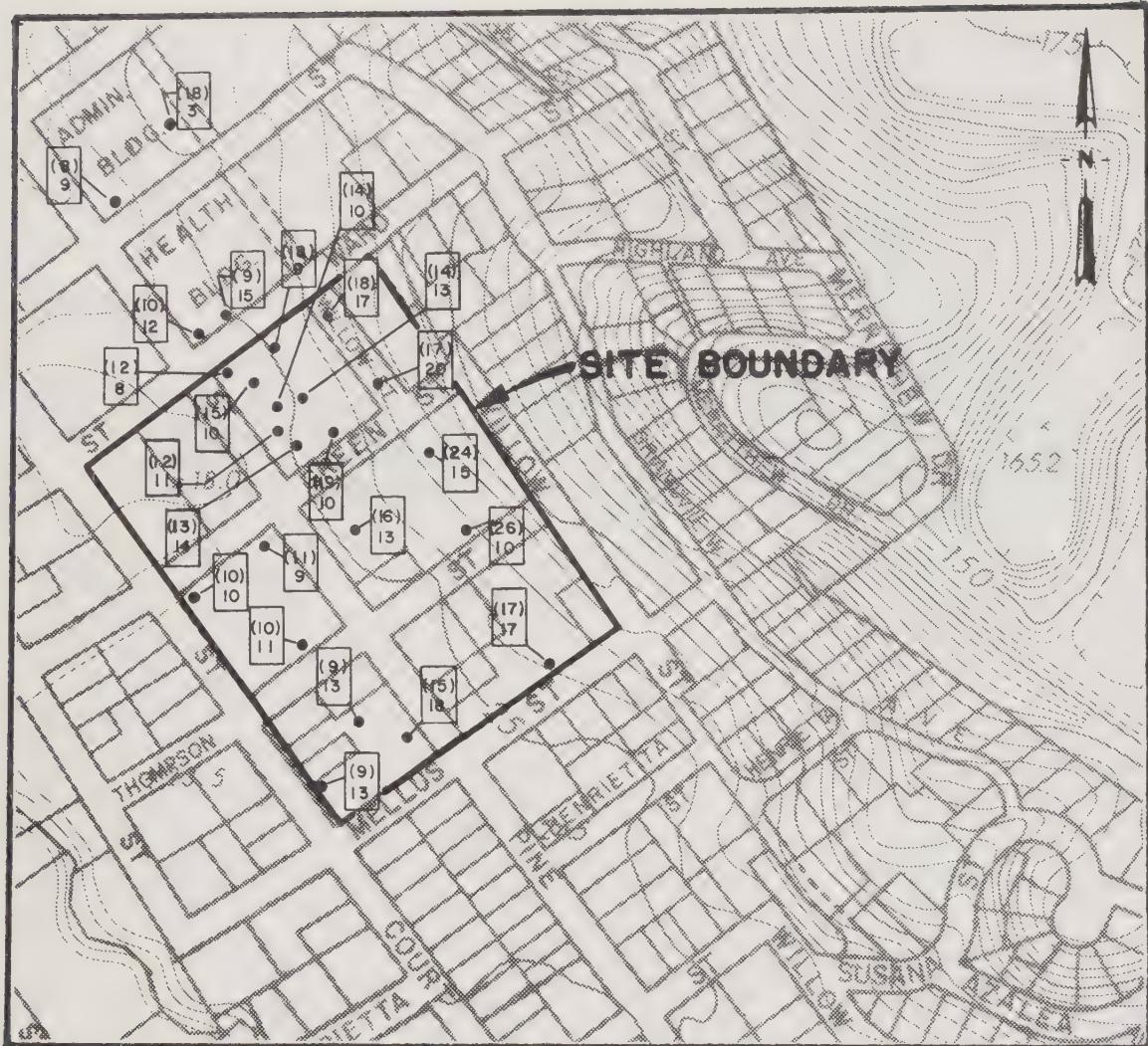
Contour interval 5 feet

CONDITIONS REPORTED IN VICINITY
OF CONCEALED FAULT
CONTRA COSTA COUNTY DETENTION FACILITY
Martinez, California

have suggested that the bedrock may belong to the Nortonville shale member of the Kreyenhagen Formation. This is not a significant difference since the Domengine sandstone is also a member of the Kreyenhagen Formation.

vii. Ground Water

Ground water was encountered in the borings (Woodward-Clyde Consultants, 1976a and b; and Woodward-Lundgren, 1971) at depths ranging from 8 feet to 20 feet below the ground surface. In general, the greater depths to water were encountered beneath the upslope portion of the property. The depth of the ground water is shown on Figure 41.



EXPLANATION

- Depth to water at time of drilling
- Elevation on water at time of drilling
- Location of borehole from previous study

GROUND WATER SURFACE
CONTRA COSTA COUNTY DETENTION FACILITY

Martinez, California

Project No. 70082A
WOODWARD-CLYDE CONSULTANTS

Figure 41

7. Hydrology and Water Quality (Background Report Chapters 11 and 12)

a. Major Features

i. Water Movement

The project site lies within the Arroyo del Hambre (Alhambra Creek) watershed immediately adjacent to the Carquinez Strait. The watershed drains approximately 16.5 square miles of land (Figure 42). The City of Martinez is located at the mouth of the watershed and constitutes most of the urban development within the watershed. This is an important concern because residential, commercial and industrial development can alter a watershed's natural hydrologic characteristics, e.g., increasing total runoff and storm runoff, and decreasing time of concentration (that time required for runoff to reach a channel). With most of the development concentrated adjacent to the Carquinez strait, peak storm runoff from the urban areas has probably passed through the channel and into the Strait before the peak runoff from the upper watershed reaches Martinez. Consequently, development in Martinez generally has little influence on runoff from short duration intensive storms such as are used in designing storm drainage systems. In general, the major water collecting occurs in the hills of the basin and arrives fairly rapidly in the alluvial valleys which do not have sufficient slope or large defined channels to prevent water from overtopping Alhambra Creek as it approaches the Carquinez Strait.

A recording stream-gauge was installed by the U. S. Army Corps of Engineers on Alhambra Creek at Martinez in October 1964 (see Figure 43). This gauge records runoff from an approximate area of 15 square miles and is maintained by the U. S. Geological Survey. No runoff records are available prior to this date. The East Bay Municipal Utility District has maintained a stream-gauging station since 1938 on Pinole Creek, which drains an adjacent area to the west of Alhambra Creek. Records from this station are published in the U. S. Geological Survey Water Supply Papers beginning in 1960.

ii. Rainfall

The climate in the drainage basin is characterized by warm, dry summers and mild, wet winters. The average annual precipitation is about 20 inches, varying from about 18 inches near Carquinez Strait to 22 inches over higher elevations. Over 90 percent of the seasonal precipitation occurs during the seven-month period, October through April. Snowfall is infrequent and snowmelt is not a contributing factor to flood runoff.

Figure 42
Flood Control Zone 5

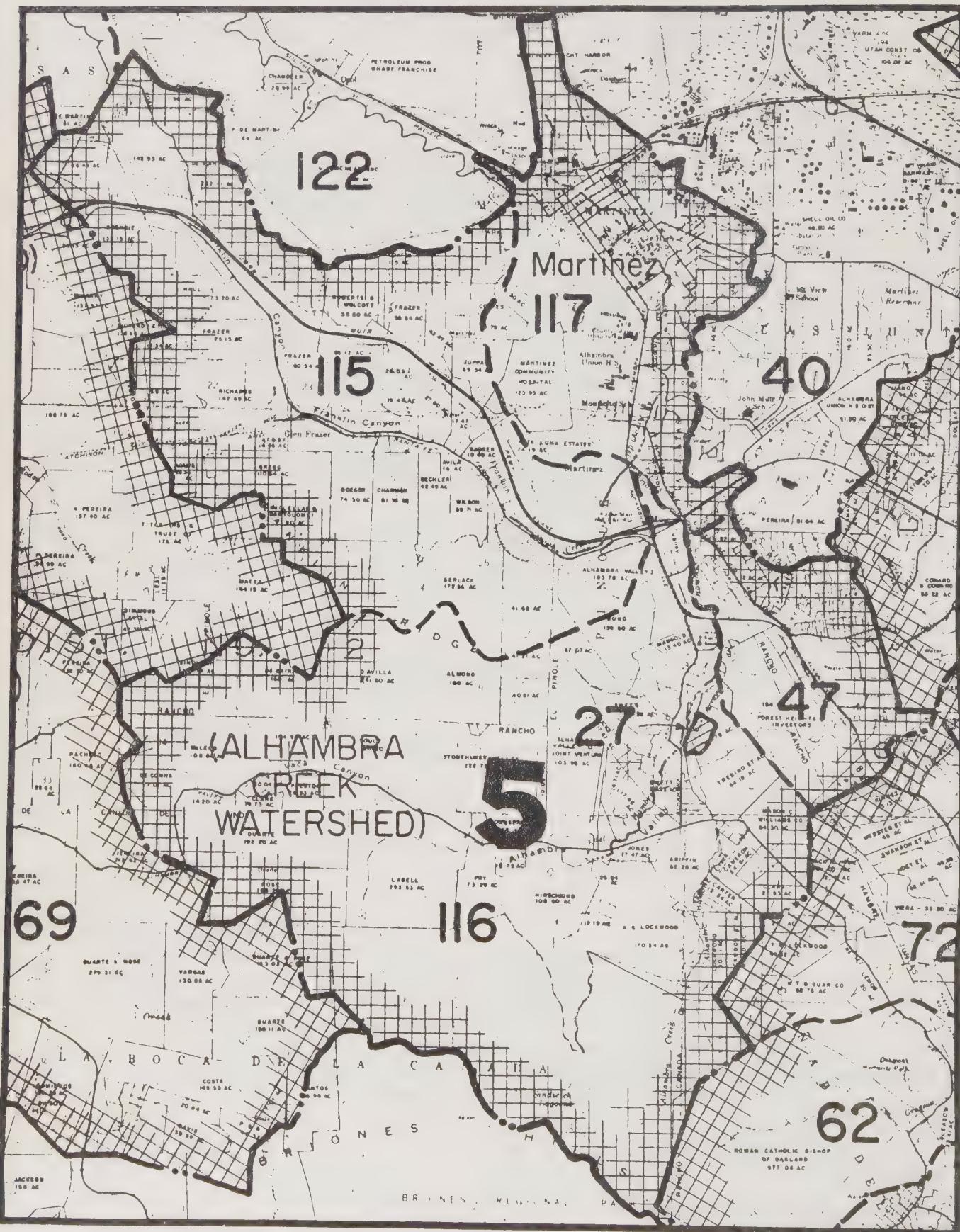


Figure 43
H.U.D. Flood Hazard Area
City of Martinez, 1976



iii. Site Discharge

According to data provided by Tudor Engineering Company the existing runoff from the project site is approximately 9 cubic feet per second (cfs) for the 10 year (10% likelihood of occurring) storm and 13 cfs for a storm with a 1% (100 year) likelihood of occurring. This is based on a runoff coefficient of 0.50 which approximates existing conditions (Background Report Chapter 11).

b. Flood Control Zone and Plans

The Alhambra Creek watershed has been designated as Flood Control Zone 5 by the Contra Costa County Flood Control and Water Conservation District. This zone was established in 1970 and plans were developed for improving the drainage in the zone; however, these plans have not been formally adopted by the district.

c. Drainage and Flood Control Improvements

Few improvements within Flood Control Zone 5 have been constructed to this date. Some drainage improvements have been constructed in the Civic Center area (see Figure 44). The major facilities are a 12 inch and an 18 inch pipe within Green Street and Mellus Street respectively. These facilities outfall into Alhambra Creek to the west.

The local storm drain system is inadequate for several reasons; most notably because of an inadequate number of facilities and because of insufficient capacity in the existing facilities. As an example, the corner of Pine and Escobar Streets frequently floods during a moderate storm.

d. HUD Flood Insurance Zone

As shown in Figure 43, the project site lies partially within the Federal Housing and Urban Development (HUD) Flood Insurance Act zone (1973). According to City of Martinez maps, the southwest corner of the property lies at 22 feet above sea level which is the projected 100 year flood elevation. Consequently, any structures must be designed with their bottom floor above this elevation.

According to Limerinos et al, 1973, the site is within the (U.S. Geologic Survey, U.S.G.S.) 100 year Flood Prone Area (Figure 45).

Figure 44
Existing Site Drainage

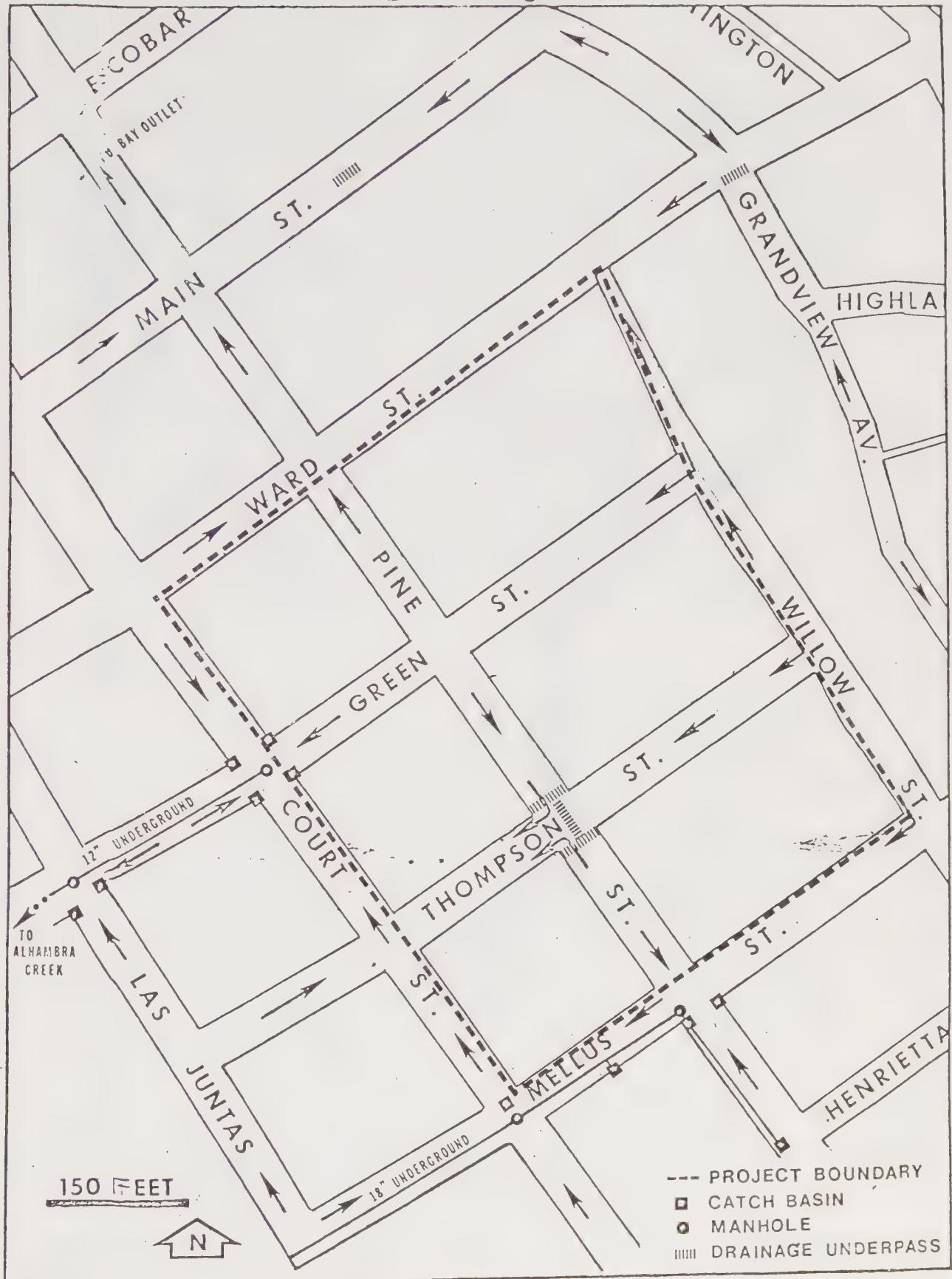


Figure 45
Flood Prone Area; U.S.G.S., 1973,
Limeriuos et al



e. Water Quality

Several water quality pollutants are generated within the project area during storm periods. Pollutant loads from non-point runoff occur primarily from November through April and originate from a number of sources. Heavy metals and other toxicants are generated by automobile residues reaching street and parking lot surfaces. The occurrence of suspended, dissolved and floatable solids is due to erosion, construction activities, street residue, and mineral leaching. Biostimulatory substances, mainly nitrogen and phosphorus, may contribute to stormwater runoff due to mineral leaching, organic decomposition and fertilizers applied to trees and shrubs. Oxygen consuming materials and organic material that generates a biochemical oxygen demand (BOD) may originate in the project area from leaves, plants or animal wastes. Insect or weed spraying may generate pesticide or herbicide pollutants. It has been estimated (Sartor and Boyd, 1972) that runoff from street surfaces during the first hour of a moderate-to-heavy storm may contribute considerably more pollution to receiving waters than would the sanitary sewage flow during the same period of time. Additionally, the State Water Resources Control Board (1975) has estimated the relative contribution of five day BOD from non-point sources in the San Francisco Bay Basin to be as much as 30 percent of the total load on receiving waters.

The project area, as part of the larger San Francisco Bay drainage basin, can be characterized as a typical urbanized area. Urban stormwater runoff from such areas contribute substantially to physical and chemical pollutants in the San Francisco Bay receiving waters.

The quality of storm water runoff in the project area can be characterized by estimates (U. S. Environmental Protection Agency, 1972) for several key parameters, as shown in Table 12. The values represent the amount of each constituent likely to be found along curb gutters within the project area. Storm water runoff washing this total load into the drainage system would represent a single event flow of pollutants into receiving waters. For the first storm of the year, high BOD levels may reduce oxygen levels in bay waters, and other pollutants add to the cumulative degradation of receiving waters due to urban storm water flow.

Table 12

Estimated Quantities of Pollutants Along Curb Street Gutters in Project Area (grams) (Background Report Chapter 12)

<u>BOD</u>	<u>COD</u>	<u>PO₄</u>	<u>NO₃</u>	<u>Pb</u>	<u>Zn</u>	<u>Hg</u>	<u>Total Solids</u>
141	499	18	9.1	41	44	4.5	16,330

(BOD, Biochemical Oxygen Demand; COD, Chemical Oxygen Demand)

8. Vegetation and Wildlife (Background Report Chapter #8)

Vegetation in the Martinez area prior to settlement in the mid-1800's was dominated by valley oak woodlands, native grasslands and streamside woodlands. Prior to this time the coastline was primarily sandy beaches. The Karquin Indians apparently had little impact upon the native vegetation.

Spanish and Mexican influence was probably limited to woodcutting and initial transition of native grasslands to European annual grasses and weed species.

The Martinez shoreline was impacted, as was much of the Sacramento-San Joaquin Delta and greater San Francisco Bay, by siltation from the hydraulic mining operations in the Sierra Nevada mountains. This impact, along with dredging and landfilling, hastened the conversion of the shoreline from sandy beaches to brackish tidal marshes in the later 1800's.

By 1876 Martinez was a bustling county seat and a center of commerce and agricultural distribution. Many imported plant species were introduced. Developing the town of Martinez further reduced the streamside and valley oak woodlands to the immediate channel of Alhambra Creek.

a. Vegetation

i. Species Composition

A comprehensive survey of the County Civic Center area revealed that the area has been entirely converted to an urban environment. The only exceptions are a few native oaks, shrubs and wildflowers. The vast majority of the vegetation in the proposed Detention Facility site is composed of introduced ornamental and weedy species of plants which greatly influences the animal species composition and population levels (see Major Vegetation of Contra Costa County Detention Facility Map and accompanying legend. Figure 46, Table 13).

ii. Environmental Conditions

The relative health and well being of the vegetation in the Civic Center area varies with the particular site, maintenance and suitability of the particular species for the area (some plant species may not be particularly adapted to the Martinez area). For instance, the plants in the maintained landscaped parking lots (Blocks 1 and 2) are considered in good condition. The "razed" unmaintained parking lots on vacant land (Blocks 3, 4 and 5) are dominated by "weedy" species and some volunteer native species (valley oak and Mexican elderberry). In a generally

Figure 46

MAJOR VEGETATION OF CONTRA COSTA COUNTY DETENTION FACILITY SITE



② Significant Trees

Under Negotiation for
County Acquisition 2/4/77



Table 13

List of "Major Vegetation of Contra Costa County Detention Facility Site"
(See Figure 46)

1. Alder
2. Blackwood acacia
3. Camphor tree
4. Canary Island date palm
5. Catalpa
6. Chinese pistache
7. Corkscrew willow
8. Cutleaf birch
9. Deodar cedar
10. Dracaena palm
11. Fruit trees (apple, peach, apricot, fig, lemon)
12. Italian cypress
13. Maple
14. Mexican elderberry
15. Port Orford cedar
16. Purple leaf plum
17. Red Horsechestnut
18. Siberian elm
19. Sycamore
20. Toyon
21. Victorian box
22. Walnut
23. Valley Oak

intermediate condition are the residential parcels in Blocks 4, 5 and 6. Here the vegetation is generally overgrown but healthy. Individual variation is due to the relative amount of care given.

b. Wildlife

i. Species Composition

The area surveyed is fairly typical of most urban habitats and supports a relatively limited diversity of wildlife species. Few mammals, reptiles, or amphibians can tolerate the close and continuous presence of humans, predation by domestic cats and dogs, or the lack of preferred food and cover. On the other hand, many birds (particularly songbirds) and insects find this habitat suitable. Residential vegetation in particular provides dense tree and shrub cover for nesting birds. The diversity of plants provides variety of foods for birds and hosts for insects.

A number of species commonly found in local urban habitats and likely to occur in the area surveyed, are non-native species which have adapted to this human-dominated environment. These species include the domestic pigeon, house sparrow, starling, opossum, fox squirrel, Norway rat, black rat, and house mouse. Most of these introduced species are often considered pests.

The greatest number and diversity of wildlife species probably occur in the residential portions of the proposed Detention Facility site where food and cover are most abundant. Residential areas have the highest wildlife value in the area surveyed but have relatively low value in context with all available habitats in the County.

ii. Levels and Population Stability

While details of population dynamics are beyond the scope of this report, some generalizations may be inferred. Populations of rodents and songbirds are probably stable in residential areas due to the relative abundance of food and cover. Resident populations in other portions of the area surveyed are probably very limited, if not absent, due to the disturbed or sterile nature of the landscaped parking lots and razed or vacant areas.

Landscaped areas in the northwesterly portion of the Civic Center are similar in wildlife value to the landscaped parking lots in Blocks 1 and 2. Few species can tolerate this relatively sterile habitat as discussed above. However, nesting birds may reside here, and a few species such as the domestic pigeon, barn owl, and black rat, may utilize county buildings for nesting or perching. Overall, the area has a poor wildlife value.

Residential areas near the proposed Detention Facility site are similar in wildlife value to the existing residential portions of the proposed site. Commercial blocks to the west hold almost no value for wildlife due to the absence of vegetation. Large vacant lots northwest of the Civic Center similarly have little value, although a few rodents and birds may inhabit or visit this area. On the other hand, the Martinez marsh has a high wildlife value. Although disturbed by filling and/or dumping and located in proximity to humans, the marsh is fairly rich in bird life. Various shorebirds, water fowl, marshbirds, gulls, and birds of prey (raptors) frequent the area. The white-tailed kite, a raptor that was once widespread in the United States but is now a rarity east of the Sierra Nevada, commonly hunts in the marsh. The Suisun song sparrow, a subspecies found only in the Suisun Bay region marshes, is also known to occur here. Other rare, endangered or unique species have been observed in nearby marshes and may be found in the Martinez marsh. These include the salt marsh harvest mouse, river otter, California clapper rail and black rail.

c. Rare, Endangered or Unique Plant and Animal Species

In its natural state, the California black walnut is considered to be rare and endangered by the California Native Plant Society and endangered by the U. S. Department of the Interior. This species is common within the area inventoried, either as root stock for the English walnut or as volunteer regrowth from the stock specimens. None occur in a natural state, therefore, none are considered rare or endangered from a statutory point of view.

No wildlife species considered to be rare, endangered or unique by public agencies or local experts were sited within the area studied. None are likely to occur due to the urbanized, disturbed environment.

9. Social Considerations

The following examines the human relationships associated with the proposed Contra Costa County Detention Facility project. The project will affect a number of social groups, ranging from the total County population, to those who will live and work in the project, the Detention Facility staff and inmates. Each group will be affected in different ways and with differing intensity. The focus of this section is broad; it encompasses essentially all aspects of the human environment except those of an economic nature. Economics are discussed in the following section (Economic Considerations).

Data were derived from a number of sources; notably the 1975 Contra Costa County Special Census, which provides the most recent compilation of comprehensive social and demographic data for the County. Other data sources include the 1970 U. S. Census (San Francisco-Oakland Standard Metropolitan Statistical Area SMSA), the California Statistical Abstract, the Contra Costa County Profile, the City of Martinez General Plan, the Environmental Impact Report for the previous "County Detention Center" proposal, and the Sheriff-Coroner's Department.

In describing the project's social-demographic setting, the various social groups affected by the project are examined. The first group examined is the total County population; attention is focused upon its population subgroups most likely to be affected by or involved in the criminal justice process, such as young adults, low income persons, and minorities. The citizens of Martinez and the population of the neighborhood surrounding the project site are also examined. These two groups are studied because they are likely to be directly impacted because of the project's location. The examination of the neighborhood surrounding the project site is concerned not only with those who live in the area but also those who work, visit, or operate businesses there. The final groups examined are those most directly affected by a detention facility, the inmates, facility staff, and visitors.

In discussing the social-demographic setting, emphasis is placed upon social and demographic characteristics most relevant to the detention facility and its impacts. The Detention Facility Advisory Committee's (DFAC) Internal Capacity Subcommittee identified a number of characteristics which committee members felt were particularly relevant to the project. (Detention Facility Advisory Committee's Internal Capacity Subcommittee, Report of the Detention Facility Advisory Committee Internal Capacity Subcommittee, May 18, 1976.) These included the age-sex structure of the population, economic status - particularly the gap between the rich and the poor, housing quality, education levels, and unemployment. The Subcommittee felt that changes in the size of the high crime age groups would have more impact upon jail population levels than would the growth of the total population. It also felt that the gap between the rich and the poor, low education levels, poor housing conditions, and unemployment were factors which tend to result in increasing criminality and a resultant rise in detention facility population levels.

a. Contra Costa County

Contra Costa County, situated on the eastern shore of San Francisco and San Pablo Bays, is one of the nine counties of the San Francisco Bay Region. Although in this report, the County is often discussed as if it were a separate and distinct social entity, it should be remembered that Contra Costa is an integral part of the metropolitan community. The County serves as a bedroom community for many non-County metropolitan area workers, and at the same time provides employment for persons living outside of the County. The degree of Contra Costa's integration within the Bay Area is evidenced by the 1975 Census finding that 40.7% of the County's workers commuted outside of the County to work.

Contra Costa County has a diverse social environment, which includes the old, intensively urbanized areas and pre-World War II suburbs of west County, the sprawling suburbs of central County, and the rurally oriented communities of east County. The County's demographic diversity should be kept in mind when reviewing the information presented here.

Contra Costa County has grown rapidly since 1940, when its population stood at 100,000. Population tripled between 1940 and 1950 and continued to increase rapidly, reaching 555,805 at the time of the 1970 Census. Growth has slowed since the mid-1960's; the rate of population increase since 1970 has been approximately 1% per year. Future projections suggest that this modest rate represents a new trend in the County's growth pattern. A rate of increase of approximately 1½% per year is projected for the next 10-15 years by the County Planning Department (Table 14).

As Contra Costa County has grown and diversified, the demographic characteristics of its population have changed (see Table 15). A significant contributing factor has been the low birth rates of the past 10 years. Recent years have seen a noticeable aging of the County's population as the proportion of elderly has increased and the number of young children has declined. The change in the County's age structure is particularly important to the detention facility project because facility inmates tend to be drawn primarily from a specific segment of the population, young adult males. This group has traditionally accounted for a high proportion of arrests and jail bookings, both nationally and in Contra Costa County. The changing size of the young adult male population group is likely to affect future jail population levels. In the period 1985-2000, the growth rate of this population group is expected to diminish, hopefully reducing the rate of growth of the jail population.

Table 14
CONTRA COSTA COUNTY POPULATION: 1940-1990

Year	Population	Percent Change
1940	100,450	
1950	298,984	197.6
1960	409,030	36.8
1970	555,805	35.9
1975	582,829	4.9 (1970-1980 rate = 11.9%)
1980 ¹	622,000	6.8
1990 ¹	719,000	15.6

¹Projection by Contra Costa County Planning Department.

Source: U. S. Bureau of the Census, 1975 Contra Costa County Special Census, Contra Costa County Planning Department.

Table 15
1975 CENSUS DEMOGRAPHIC STATISTICS
CONTRA COSTA COUNTY, CITY OF MARTINEZ, PROJECT ENVIRONS

Data Item	Contra Costa County	City of Martinez	Area A ¹	Area B ²
Total Population	582,829	18,702	296	1,005
Percent Male	49.3%	49.5%	74.0%	49.7%
Percent Female	50.7%	50.5%	26.0%	50.3%
Median Age	30.0 yrs.	29.2 yrs.	40.2 yrs.	30.7 yrs.
Average Age	32.5 yrs.	32.1 yrs.	40.8 yrs.	37.1 yrs.
Percent Under 18	31.5%	32.0%	7.4%	21.7%
Percent 65 and Over	7.9%	8.5%	11.8%	15.4%
Persons Age 65 and Over	45,591	1,588	35	155
Persons Age 0-5			10	75
Persons Age 6-11			7	55
Persons Age 12-13			1	23
Persons Age 14-18			10	75

¹Block Group 1, Census Tract 3160

²Block Group 1, Census Tract 3170

Source: 1975 Contra Costa County Special Census.

Another significant demographic trend is the diversification of the County's racial composition. Although in 1940 less than 5% of the County's population was non-white, by 1970 the non-white segment of the population had increased to nearly 20%.

b. Martinez

The social composition of the City of Martinez reflects the diversity of the County in many respects. Martinez is at the same time an old, industrially-oriented city, the home of a large oil refinery, and an expanding suburban community. Martinez was one of the largest cities in the County in the first decades of the century, but it has declined in prominence as other parts of the County have grown more rapidly. However, in the last 15 years Martinez has experienced a resurgence of growth, as suburban neighborhoods have developed in the southern part of the city. Between 1960 and 1975, the population of Martinez nearly doubled, from 9,604 to 18,702 (Table 16). In 1975, the southern suburban part of the city (south of Highway 4) contained half of the city's population, 9482 residents.

In many respects, Martinez can be viewed as composed of two separate areas. The northern area of the city is older, declining in population, and has a small town character, while the southern area is more recently developed, growing, suburban in nature, and resembles other central County communities. In addition the two areas are physically separated by hills and a freeway, they have significantly different socio-economic characteristics, and residents of the southern area are frequently oriented toward central County rather than to central Martinez. Because of this dichotomy, and because there is little potential for impact in the South Martinez area, it was decided to focus attention upon the area of town which contains the project site, North Martinez. The following discussion focuses particularly upon the proposed project's immediate environs. Information for the entire City of Martinez is also presented in the next section.

c. Project Environs

In examining the immediate social environment of the proposed project, it was decided to focus attention upon the North Martinez neighborhood most directly affected by the project. Examination of the immediate project area revealed the need to identify an area which both contained the area most highly impacted by the project and for which statistical information was readily available. Upon examination of census statistical areas, it was found that this general "impact" area was basically outlined by Block Group 1 of census tract 3160 and Block Group 1 of tract 3170. The two neighborhoods are respectively referred to as Area A and Area B (see Figure 47). A review of the data for these two areas revealed

Table 16

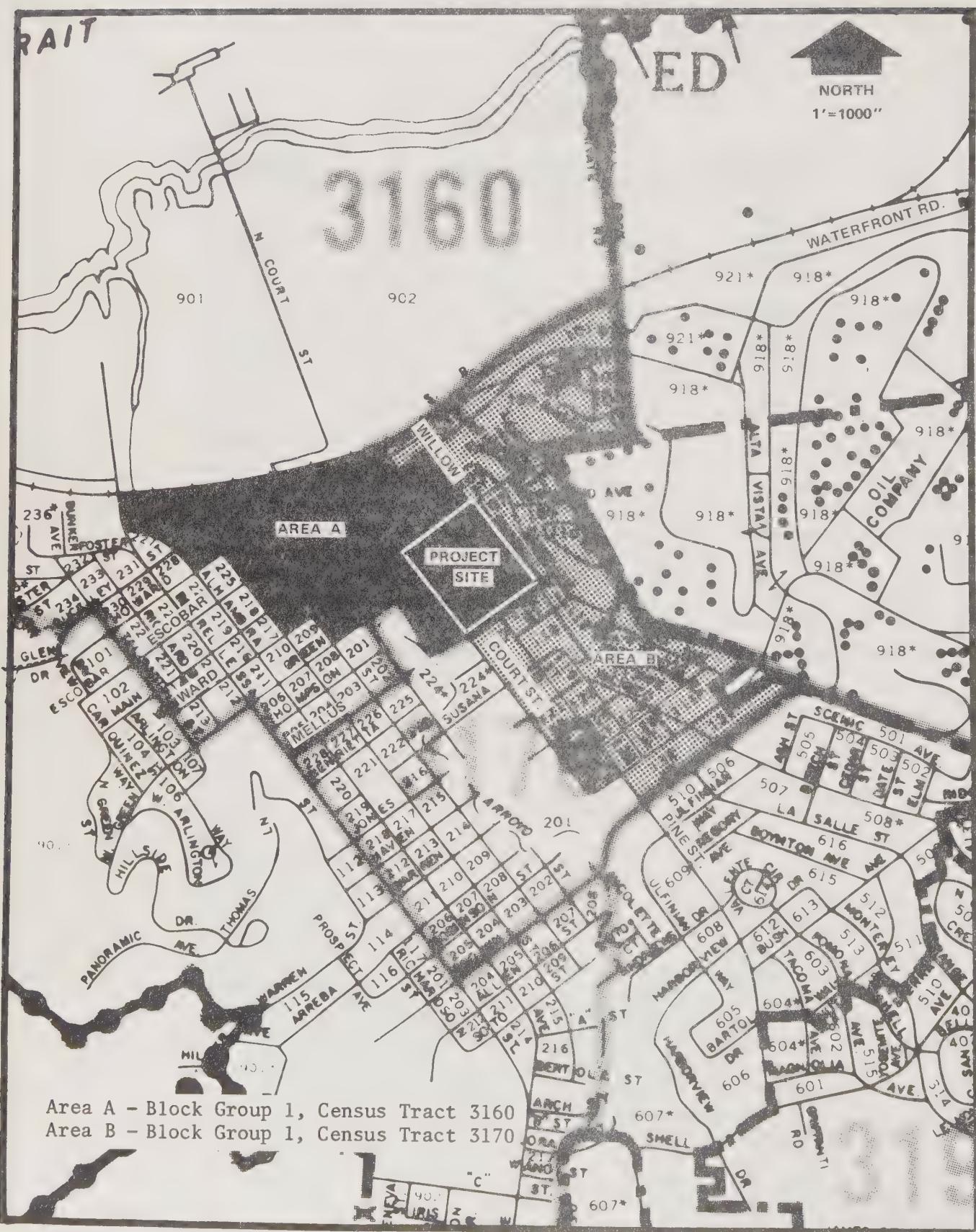
POPULATION GROWTH: 1900-1975
CITY OF MARTINEZ

<u>Year</u>	<u>Population</u>	<u>Numeric change</u>	<u>Percent Change</u>
1900	1,380		
1910	2,115	735	53.3%
1920	3,858	1,743	82.4%
1930	6,569	2,711	70.3%
1940	7,381	812	12.4%
1950	8,268	887	12.0%
1960	9,604	1,336	16.2%
1970	16,506	6,902	71.9%
1975	18,702	2,196	13.3%

Source: U.S. Bureau of the Census, Contra Costa County Special Census (1975).

Figure 47

PROJECT ENVIRONS STATISTICAL AREA



Area A - Block Group 1, Census Tract 3160
Area B - Block Group 1, Census Tract 3170

that they are considerably different from one another in certain respects. Consequently in the following discussion the two described neighborhoods are sometimes discussed separately.

Because of the way in which the 1975 Special Census was conducted, the existence of the present main jail biased a few data items for Area A. Of the 296 residents of Area A reported by the 1975 Special Census, 152 were detention facility inmates. However, since only age, sex and employment status data were reported for the inmates, the remainder of the data reflects only the characteristics of the area's residents. In the following discussion, those data items biased by inclusion of inmate data are so designated.

Areas A and B comprise a neighborhood which in many respects is typical of downtown areas of small older cities. The commercial area, which is dominated by small retail establishments, gives the impression of having seen better days. The primary business street, Main Street, is active primarily at lunch time, when County employees are shopping or eating. The area immediately surrounding the business district contains numerous small industrial establishments, and small apartment buildings. Many of the residents in this area are middle-aged and elderly single men, some of whom are transients. Moving further away from the business area there are residential areas of older single family homes, many of which are occupied by elderly families who have lived in the area for many years. Also in the area is the County government complex, which provides a bit of contrast in an otherwise small town setting.

Analysis of statistical information indicates that Area B is an older stable area characterized by low to moderate incomes, a high proportion of elderly residents, and a preponderance of single family homes. On the other hand, Area A exhibits many characteristics of a less stable, transient oriented neighborhood, as might be expected of an area comprised primarily of retail and small industrial establishments. In Area A, most dwellings are multiples, home owners are few, unemployment is high, incomes are low to moderate, there are few children, and length of residing is relatively short.

The project environs population also includes those who work and own businesses in the area as well as those who visit for business, shopping, or personal reasons. Unfortunately, data describing the characteristics of non-residents is generally lacking. However, Contra Costa County's Land Use and Transportation Study provides data concerning the number of businesses and employees in the area during 1970. (County of Contra Costa, Land Use and Transportation Study, Contra Costa County Employment Inventory Analysis, October, 1974.) The Study found that in a statistical

area closely approximating Areas A and B there were 3,400 employees (primarily governmental) and 337 retail, other business, and industrial establishments. A decline in the number of County government employees working in the Civic Center since that time may have resulted in a small reduction in the number of persons working in the area. As of July 1, 1976, there were approximately 1700 County government employees working in the Civic Center area. Although it is difficult to estimate the number of visitors to the area, the large number of retail and other business establishments as well as the presence of County government offices suggests it is substantial. An increase in visitors to the area is expected in a few years, when the joint regional/city waterfront park is completed.

d. Detention Facility Inmates

County jail inmates represent a continually changing population group. Although the membership of the group changes literally by the hour, the characteristics of any given inmate population group are likely to be quite similar to those of other inmate groups, because the inmate population tends to be drawn primarily from specific social, economic, age, and sex groups. A cross-sectional sample of Contra Costa County's inmate population is provided by an April 15, 1976 census of inmates taken by the Sheriff-Coroner's Department (see Table 17).

Data from the Sheriff-Coroner's survey indicate that the County's jail inmate population consists primarily of young adult males. On the survey day, 204 (92%) of the 222 inmates were males; and of these 204 males, 96% were between the ages of 15 and 40. The concentration of inmates in their 20's is noticeably strong; 60% of the males and 72% of the females were age 20-29. Racially, blacks constitute nearly half of the inmate population (46%), although countywide they comprise only 8% of the population.

Additional data further reveal the extent to which the inmate population is a very distinctive population subgroup. Approximately three-quarters (74%) of the inmates were unmarried; and the percentage of unemployed was also 74%. One-quarter of all inmates were not County residents. Of the inmates who were County residents, over one-half (54%) were from west County, an area which contains only 30% of the County's population. Central County, with over half (56%) of the County's population, accounted for only 23% of County resident inmates; the remaining 23% of County resident inmates were from east County (Table 18).

e. Detention Facility Staff and Visitors

Persons whose activities will bring them into the proposed Facility are the group most directly impacted by the project. In addition

Table 17

AGE, SEX, AND RACE OF
 CONTRA COSTA COUNTY DETENTION FACILITY INMATE POPULATION¹
 APRIL 15, 1976

AGE	TOTAL			WHITE			BLACK		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total all Ages	222	204	18	120	113	7	102	91	11
Under 10	0	0	0	0	0	0	0	0	0
10-14	0	0	0	0	0	0	0	0	0
15-19	27	26	1	18	18	0	9	8	1
20-24	76	69	7	43	40	3	33	29	4
25-29	60	54	6	34	32	2	26	22	4
30-34	29	26	3	11	10	1	18	16	2
35-39	20	19	1	6	5	1	14	14	0
40-44	4	4	0	4	4	0	0	0	0
45-49	4	4	0	3	3	0	1	1	0
50-54	1	1	0	0	0	0	1	1	0
55-59	1	1	0	1	1	0	0	0	0
60-64	0	0	0	0	0	0	0	0	0
65-74	0	0	0	0	0	0	0	0	0
75 and Over	0	0	0	0	0	0	0	0	0

¹ Includes inmates of Main Jail, Branch Jail, Hospital, Santa Rita, and San Bruno.

Source: Contra Costa County Sheriff-Coroner's Office Survey.

to inmates, this group includes the facility staff, visitors, and persons whose work will bring them into the facility, such as attorneys, bailbondsmen, and probation officers.

The staff of the proposed Facility will include 134 deputized and civilian employees. There are other persons whose work will cause them to spend part of their work time in the Facility. Such persons include district attorneys, public defenders, bailbondsmen, probation officers, police and sheriff personnel who transport inmates to the facility, teachers of classes for inmates, and ministers.

Visitors include friends and relatives of incarcerated persons, and consequently comprise a large and constantly changing population group.

Table 18

CHARACTERISTICS OF THE CONTRA COSTA COUNTY
DETENTION FACILITY INMATE POPULATION¹
APRIL 15, 1976

Stated Residence

55 Out of County
90 West County
39 Central County
38 East County

Charged Crimes

182 Felonies
15 Felonies and Misdemeanors
25 Misdemeanors

Employment Status

51 Employed
165 Unemployed
6 Students

Sentenced - Unsentenced

167 Unsentenced
55 Sentenced

Marital Status

162 Single
58 Married
2 Divorced

¹ Includes inmates of Main Jail, Branch Jail, Hospital, Santa Rita, and San Bruno

Source: Contra Costa County Sheriff-Coroner's Office Survey.

10. Economic Considerations

The purpose of this section is to describe and analyze the Contra Costa County Detention Facility's economic setting. The focus of the report is upon such general economic characteristics as employment, retail sales, property values, and government financing. Emphasis is placed upon the economic characteristics of the project and the project's influence upon the economic characteristics of the neighborhoods, businesses, and individuals which it will affect. The project, as considered herein includes the proposed Detention Facility building, which contains two courts, and associated parking lot development on the project site. It does not include the courts addition (for four or more courts) which has not been designed at this time and is proposed for construction at a later date.

This section is comprised of two parts. The first is a brief economic description of the project and details the sources of funding and the costs of the project. The second provides a description of the project's economic setting, focusing upon the economic characteristics of the areas and groups which will be affected by the project.

a. Economic Description of the Project

This section provides a summary of the costs of constructing, furnishing, and operating the proposed project.

i. Construction Costs

Preliminary project cost estimates released by project's construction manager, Turner Construction Company, are detailed in Table 19. Of the total \$20 million budgeted for construction, \$15 million is allocated for direct construction expenses. Forty percent of this \$15 million will be spent for labor, the remaining 60 percent will be spent on materials.

The \$20 million budgeted for construction of the project includes all funds allocated for construction of the detention/courts building and for parking lot development on the project site. It includes funds allocated for the project architect, programming consultant, construction manager, the diversion of Pine Street, utility relocation and drainage. It does not include funds needed for the provision of additional court facilities at a later date, or funds previously spent for acquisition of the site. Most of the site acquisition occurred as part of the County's general acquisition of civic center property, and consequently funds for this purpose were not taken from the detention facility project budget. However, four properties, valued at approximately \$300,000 are being purchased with funds from the project budget.

Table 19
PRELIMINARY CONSTRUCTION COST
SUMMARY

<u>Item</u>	<u>Cost</u>
Excavating and Foundations	\$748,000
Structural Frame and Roofing	1,961,000
Exterior and Interior Wall	788,000
Vertical Transportation	170,000
Fire Protection	223,000
Electricity (including security systems)	1,248,000
Plumbing	1,783,000
HVAC and Building Automation	1,426,000
Sitework and Utilities	596,000
Pine Street Diversion	375,000
Special Requirements (equipment, etc.)	2,701,000
 SUBTOTAL - Direct Construction Costs	 15,019,000
 Other Project Costs (architect, construction manager, soil testing, etc.)	 2,913,000
Project Contingency	2,068,000
 TOTAL CONSTRUCTION BUDGET	 \$20,000,000

Source: Turner Construction Company

ii. Furnishing and Equipment Costs

The above construction cost summary does not account for furnishing and equipment such as tables, desks, bunks, chairs, shelves, kitchen utensils, and library books. Facility Sciences Corporation estimated cost of providing such items at \$696,000.

iii. Operating Expenses

Estimates of staffing costs for the new Facility developed by the project's programming consultant, Facility Sciences Corporation (FSC), are shown in Table 20. Based upon July 1, 1976 County salary levels, FSC has estimated that it will cost \$2,631,400 per year in salaries and fringe benefits for staff to operate the Facility. This figure is more than double the \$1,076,000 which the County budgeted for personnel to operate the existing main and branch jails during Fiscal 1975-1976.

Preliminary estimates of all operating expenses other than personnel expenses have been developed by the Sheriff's Department these estimates, which include all service and supply costs, indicate that operating expenses exclusive of personnel costs will be approximately \$1,056,000 per year for the proposed facility. This compares with a current non-personnel operating cost of approximately \$708,000 for the main and branch jails. Operational costs excluding salaries are discussed in the Utilities and Community Facilities section of this report.

b. Economic Setting of the Project

This section provides a description and analysis of the project's economic environment with emphasis upon the criteria most relevant to an evaluation of the proposed Detention Facility's economic impacts. There are discussions of the economic environments of Contra Costa County and the City of Martinez, with the Martinez analysis focusing upon the areas most directly affected by the project, the areas surrounding the project site. Also provided is a discussion of County government finances, with particular emphasis upon financing for both the existing and proposed detention facilities.

i. Contra Costa County

The economy of Contra Costa County is characterized by an economic base focused upon heavy industry and retail trade and services, and a labor force which tends to work in other counties almost as often as in Contra Costa. The county's economy is well integrated within the overall economy of the San Francisco Bay Area, but it plays a specialized role within that

Table 20

ESTIMATED STAFFING COSTS*

CONTRA COSTA COUNTY DETENTION FACILITY

Position	Monthly Rate Range	Monthly Rate Used ¹	# Positions	Monthly Total
<u>SECURITY STAFF²</u>				
Shift Supervisor	1472-1790	1,500	5	7,500
All Other Posts	1272-1545	1,350	98.6	133,110
(SUBTOTAL) (103.6)				(140,610)
<u>ADMINISTRATIVE SERVICES</u>				
Detention Center Superintendent	2045-2486	2,200	1	2,200
Deputy Superintendent	1713-2083	1,850	1	1,850
Program Coordinator	1485-1805	1,600	1	1,600
Asst. Program Coordinator	1272-1545	1,350	1	1,350
Court Liaison Officer	1485-1805	1,600	1	1,600
Nurse	1240-1367	1,300	5	6,500
Medic	680- 827	750	5	3,750
Alcohol Recovery Staff	1306-1588	1,440	3.2	4,610
Doctor	3702-4307	4,000	.5	2,000
Dentist ³	None	2,890	.3	870
Chef	1881-2076	1,940	1	1,940
Cook	1625-1792	1,700	4	6,800
Clerical Accountant ⁴	800-1100	800	6	4,800
SUBTOTAL				39,870
TOTAL MONTHLY				180,480 ⁵
TOTAL YEARLY				2,165,760 ⁵

* Based on Suggested Staffing Pattern and on Contra Costa County Civil Service Rates (July 1, 1976) except as indicated.

1. Rough midpoint.
2. Represents November '75 rates plus 8%, actual 76 rates to be negotiated shortly
3. Contra Costa County currently paying 16.80 per hour on part-time basis
4. Requires more definitive job description(s)
5. Does not include fringe benefits. With benefits added, the monthly total is \$219,300; annual total is \$2,631,400, Fringe benefits were added at 21.5%; source: County Auditor's Office.

regional economy. The degree of the county's economic interdependence is demonstrated by the 1975 Census revelation that 40.7% of working residents of Contra Costa County were employed outside of the County, primarily in Alameda County and San Francisco. While the County functions in part as a bedroom community for the San Francisco and Oakland employment centers, at the same time it is the home of much of the Bay Area's heavy industry, which employs many workers residing in other counties. In 1975, approximately 23,000, or 14.4% of the estimated 161,000 persons employed in the County, were residents of neighboring counties. Heavy industry benefits the County by contributing substantially to the tax base, but at the same time the County's reliance upon capital intensive heavy industry which provides comparatively few jobs relative to investment has helped to foster the County's low level of employment opportunities.

An historical examination of the County's economy is helpful in understanding its present structure. Virtually all of the County's growth in heavy industry, such as oil refineries, steel mills, and chemical plants, took place in the first half of this century. Since 1950, the County's heavy industrial base has remained relatively stable in terms of firms and employment. However, during the past 25 years there has been rapid population growth in the central and southern portions of the County. Most of this growth is directly a result of suburban expansion of the San Francisco-Oakland metropolitan area, and a high proportion of those moving into the suburban areas are employed in San Francisco or Alameda County.

During this period of suburbanization, the number of industrial jobs remained relatively stable, in the 25,000 to 30,000 range (see Table 21). Most of the County's increase in jobs during this period resulted from a growth in service employment. For example, between 1960 and 1970, the number of jobs in retail trade, services, government and public education increased by 80%; this increase accounted for 84.4% of the total growth in county employment in the decade. Recent countywide trends indicate that the concentration of growth in retail trade, services, and government employment is likely to continue, but not necessarily to the exclusion of growth in light and heavy industry.

As has been true throughout the State, the economic recession of the mid-1970's has had a significant impact in Contra Costa County. One impact of the recession has been an increase in the rate of unemployment. Although the County's unemployment rate declined somewhat during 1976, in October 1976 the State Employment Development Department estimated the County's unadjusted unemployment rate at 10.4%.

Table 21

EMPLOYMENT AMONG MAJOR INDUSTRY GROUPS:1960-1980
CONTRA COSTA COUNTY

Industry Group	1960	Number Employed			1960	Percentage Distribution		
		1970	1975(est)	1980 ¹		1970	1975(est)	1980 ¹
Agriculture	2,900	3,216	2,900	2,750	2.8	2.2	1.8	1.6
Mining	300	187	300	300	0.3	0.1	0.2	0.2
Construction	10,800	10,794	11,012	11,532	10.4	7.3	6.9	6.7
Manufacturing	28,600	28,818	25,480	26,000	27.7	19.5	15.9	15.2
Transportation	6,900	8,976	8,990 ²	9,650	6.7	6.1	5.6	5.6
Wholesale	2,800	4,514	6,270	7,130	2.7	3.1	3.9	4.2
Retail	16,700	27,093	30,850	33,160	16.2	18.4	19.2	19.3
Finance/Insurance	2,600	5,496	6,300	6,980	2.5	3.7	3.9	4.1
Services	16,600	27,556	30,700	33,000	16.0	18.7	19.1	19.2
Government and Unclassified	15,200	31,174 ³	37,970	41,000	14.7	21.0	23.6	23.9
TOTALS	103,400	147,615	160,772	171,502	100.0%	100.0%	100.0%	100.0%

¹ Projections based on "medium" population growth expectations.² Beginning with the 1975 employment estimate, railroad employment is included with Government and Unclassified Employment. This reflects the formation of the government-owned AMTRAK.³ Differences in methods of allocating noncovered employment account for a major portion of the 1960 to 1970 increase in Nonclassifiable Employment.

Sources: 1960 Data: Estimate by California Department of Human Resources;
 1970 Data: Contra Costa County Planning Department LUTS Inventory Component 5-4;
 1975 and 1980 Data: Projections by the Contra Costa County Planning Department based on the earlier published material cited.

The recession of the mid-1970's also had an adverse impact upon the County's building industry. It helped generate a slowdown in building activity, which in turn has caused a significant increase in unemployment among construction workers, a contributing factor in the County's high unemployment rate. An indication of the number of County residents who work in the building trades is provided by the 1970 Census, which indicated that 17,573 County residents (8.3% of all employed residents) were employed as construction craftsmen or laborers in 1970.

Further information regarding the County's economic situation is provided by information concerning personal income and taxable sales. In recent years, Contra Costa has been ranked as one of the wealthiest counties in California as measured by personal income. For example, the 1975 California Statistical Abstract ranked Contra Costa highest among all California counties in median income based upon 1973 income tax returns. Another countywide economic indicator is the level of taxable sales. In 1975, countywide taxable sales were \$1.823 billion, or \$3,128 per county resident.

The rate of inflation, particularly for the construction industry, is very relevant to this project. Although there have been periods of rapid inflation in the construction industry in recent years, the current rate of inflation is comparatively low. The project's construction manager, Turner Construction Company, estimates that the construction cost escalation factor will be approximately 3/4% per month during final planning and construction phases of the project.

ii. City of Martinez

The economy of Martinez is quite different from the County norm. While Contra Costa County is a commuter oriented county, with considerably fewer jobs than employed residents, Martinez is an employment center, with more jobs than employed residents. According to data provided in the EIR for the 1975 "Detention Center" proposal there were 7,020 jobs and 6,234 employed residents in the Martinez area in 1970 (County of Contra Costa, Draft Environmental Impact Report, Contra Costa County, California, Criminal Justice Detention Facility, January 1975, pp. 117 and 118). This and most of the other distinctive economic characteristics of Martinez relate primarily to the older, northern area of the city, which is situated north of Highway 4. It is this area of Martinez which this discussion will focus upon, because it encompasses the project site and will be the area most directly and strongly impacted by the project.

Martinez has historically been an employment center and an industrial city. The Shell Oil Refinery is the largest industrial firm in the area, and Martinez is the home of Contra Costa County government. In recent years, as Martinez has grown, the economic importance of industry and commerce has lessened, and a growing county government has become a more important component of the city's economy. County government is a major source of employment and a significant stimulator of local retail activity.

Since 1960, the population of the City of Martinez has increased by 95%, from 9,604 to 18,702 in 1975. Virtually all of this growth has occurred in the southern part of the city, an area which is suburban in character, commuter oriented, and physically and socially quite unlike the older, northern part of the town. As Martinez has expanded its residential development to the south, transportation links with central County have improved, and Martinez has become more integrated into the economy of central county. This trend, along with the growth of retail businesses along Alhambra Avenue and the bypass of Martinez by Interstate 680, has helped to contribute to a decline of retail activity in the Martinez Central Business District (CBD). The extensive development of new retail centers in central County has also contributed to this decline.

According to data from Contra Costa County's Land Use and Transportation Study (LUTS) the Martinez employment situation is dominated by governmental employment. Over half of the jobs in the entire city are in government and education, and most of these are County government jobs. Employment is heavily concentrated in northern Martinez. Most of the government jobs as well as the majority of all jobs are in the northern part of the city. The majority of the non-government employment in northern Martinez is in retail trade and services, much of which serves the government employees.

(a) Retail Business Activity. Because the project will have a significant impact upon retail sales in Martinez, it is important to discuss the city's retail business situation. The level of retail sales activity in Martinez is now quite low. In 1975, retail establishments in Martinez accounted for \$30,359,000 in taxable transactions, a level representing \$1,623 for each Martinez resident. This figure for taxable sales per resident is barely half the countywide rate of \$3,128 per resident, and is significantly lower than the rates of \$3,843 and \$4,155 in neighboring Concord and Pleasant Hill.

The low level of retail sales citywide is reflected in the retail activity of the central business district, the retail area which will be most strongly impacted by the project. The Central Martinez General Plan Revision Analysis which

was completed in 1973 noted that over the past decade the strength and diversity of the CBD has declined significantly (ABT and Associates and Duncan and Jones, General Plan Revision Report for Central Martinez, May, 1973).

Perhaps the single most significant cause of the decline has been the growth of the major regional shopping center in the Sun Valley area in Concord, which has drawn away some of the retail activity of the CBD. Based on available data, the County Planning Department developed an estimate of the level of retail sales for the Martinez CBD. They found that the CBD accounts for approximately half of the city's taxable retail sales. Excluding service stations, the CBD's estimated taxable retail sales for 1975 was \$11,234,000.

For the purposes of this report, it is important to estimate the impact which County employee spending has on the CBD. This issue was examined in depth during the environmental review process for the County's 1975 "Detention Center." At that time, the County's Planning Economist estimated that County employees spent an average of \$12.50 per week on goods and services in the central Martinez business district (County of Contra Costa, Response Document and Second Appendix, Contra Costa County, California, Criminal Justice Detention Facility, April, 1975, pp. III-52, III-53). Updating this figure by accounting for inflation yields a current estimated expenditure of \$14.00 per employee per week. This represents a yearly expenditure by County employees in the CBD of \$1,237,600, or 11% of estimated total CBD sales.

(b) Assessed Valuation. In Fiscal Year 1975-1976, the City of Martinez had a gross assessed valuation of \$80,606,571. This represents a gross assessed value per capita of \$4,310, which is 13.8% lower than the countywide per capita figure of \$4,905. This assessment figure does not account for the reappraisal of Martinez conducted in the first half of 1976, which resulted in a substantial increase in residential valuation.

c. County Government Financing

To comprehend the economic environment of the proposed detention facility project requires an understanding of County government financing and budget considerations relating to the project. Construction of a new detention facility will require the expenditure of a very large sum of public money, approximately \$20,000,000. This expenditure is essentially a one time expense. Any increase in jail operating expenses resulting from the new facility will have to be funded out of the County's annual operating budget.

County revenues are derived from a variety of sources. The two largest sources are property taxes and aid from other governmental agencies, which primarily involves funds derived from the state and federal governments. These two sources accounted for 33.6% and 46.7% respectively of total County government revenues in Fiscal 1975-1976. The bulk of the locally derived revenue comes from property taxes. The level of funding which must be raised from property taxes is determined after the budget needs of all County departments and the amount of revenue available from non-property tax sources is ascertained. Once property tax requirements are determined, the tax rate for County taxes is set, based upon the amount of money required and the assessed valuation of the tax base. The resulting County tax rate represents only the County portion of the total tax bill each property owner must pay; other components may include city, school district, and special district tax rates. In Fiscal 1975-1976, the County tax rate (the portion of the total tax rate intended for County government purposes) was \$2.849 per \$100 assessed valuation.

The tax rate is applied to all taxable properties within the County. As an example of the magnitude of the County tax rate, the owner of a home valued at \$50,000 (assessed valuation, which is 25% of market value, is \$12,500) paid \$306.27 for the County's portion of his property tax bill in Fiscal 1975-1976. His total property tax bill would have been in the vicinity of \$1350, depending upon the specific city, school district, etc., in which he resided.

Table 22 details County budget appropriations by major functions for Fiscal 1975-1976. This budget summary includes only those expenditure appropriations for which funding must be obtained during the fiscal year. As of June 30, 1975, there was a \$37,174,652 fund balance from previous years. Of this balance, \$29,246,617 was reserved for encumbrances. Funds for the new detention facility were included among the funds reserved for encumbrances in the fiscal 1975-1976 budget.

In Fiscal 1975-1976, \$20.3 million were reserved for the detention facility project. Of this total, \$14.8 million was derived from federal revenue sharing, and the remaining \$5.5 million was in the accumulated capital outlay fund. Accumulated capital outlay funding was raised through a property tax levy of \$.05 per \$100 of assessed valuation during Fiscal 1970-1971, and another \$.10 per \$100 during the following two fiscal years. This revenue was raised specifically to help finance the construction of a new detention facility. Of the \$5.6 million raised

Table 22

BUDGET APPROPRIATIONS BY MAJOR FUNCTIONS:
CONTRA COSTA COUNTY, FISCAL 1975/1976

<u>Function</u>	<u>Final Budget 1975-1976</u>	<u>Percent of 1975-1976 Final Budget</u>
Public Assistance	\$ 91,949,731	44.5
Public Protection	38,273,277	18.5
Health and Sanitation	33,520,710	16.2
Public Ways and Facilities	16,082,740	7.8
General and Administrative	15,745,650	7.6
Plant Acquisition	1,783,911	0.9
Education, Debt Service and Other Reserves	5,407,769	2.6
	3,875,204	1.9
Total	\$206,638,992	100.0

Source: 1975-1976 Contra Costa County Final Budgets

for the outlay fund, \$180,000 was spent during Fiscal 1972-1973 for detention facility planning purposes. The funding currently reserved for the project was originally budgeted in fiscal years 1973-1974 and 1974-1975; \$14.3 million was budgeted in 1973-1974 and \$7.7 million was budgeted in 1974-1975. These two figures sum to more than the \$20.3 million available in 1975-1976 because some of the money has been spent on research and planning activities.

It is important to note that although the County effectively has \$20 million banked and reserved for the Detention Facility, any interest which that money earns will not necessarily be added to the project's funds. Interest earnings accrue to the County General Fund rather than to any specific project. Consequently, interest earned on the revenue reserved for the project's construction will not be available for the Detention Facility unless it is specifically assigned to the Detention Facility at a later date. Since the funds reserved for the Detention Facility do not earn interest (for themselves), they are particularly sensitive to inflation.

11. Air Quality and Noise (Background Report Chapters 13 and 17)

a. Air Quality

There are hundreds of substances present in the ambient air which result from natural sources as well as from man's use of his environment. Strictly speaking, these are all air pollutants. The automobile is the major contributor to overall reductions in air quality.

The major pollutants which are emitted from motor vehicle exhaust (mobile sources) are carbon monoxide (CO), nitrogen oxides (NO_x), hydrocarbons (HC), and particulates including lead (Pb). Particulate, NO_x HC and sulfur dioxide (SO_2) are also emitted in significant quantities by many industrial processes (stationary sources). These contaminants are sometimes referred to as primary pollutants since they are emitted directly from their sources.

The secondary pollutants are those quantities formed by combination of the primary pollutants. The most common are the photochemical oxidants; substances which occur in ambient air through the reaction of NO_x and oxygen in the presence of sunlight and HC. Ozone (O_3) and nitrogen dioxide (NO_2) are oxidants; O_3 is the principal oxidant in California air (as compared to sulfur oxides on the East coast).

The following discussion describes the effects and the existing state of each pollutant in the Bay Area Air Basin which is relevant to the proposed project. Because the project site is located between Concord and Vallejo air quality monitoring stations and because the Martinez station measures only SO_2 , data from the Concord and Vallejo stations are used to represent the air quality in Martinez. Figure 48 shows the San Francisco Bay Region and the location of the stations being referenced. Almost all data has been obtained from publications of the Bay Area Air Pollution Control District (BAAAPCD). The most recent air quality standards are tabulated in Table 23. Each standard usually specifies levels not to be exceeded more than once per year, or not to be exceeded at all in the case of annual measurements.

The periods to which the standards apply vary with each pollutant, and several pollutants are regulated over more than one time period. In Table 23 the primary standards are those set to protect human health and welfare; the secondary standards protect against damage to vegetation and materials.

i. Carbon Monoxide

Carbon monoxide is a colorless, odorless, tasteless gas. It is formed as a by-product of the incomplete burning of carbon

Air Quality Monitoring Stations

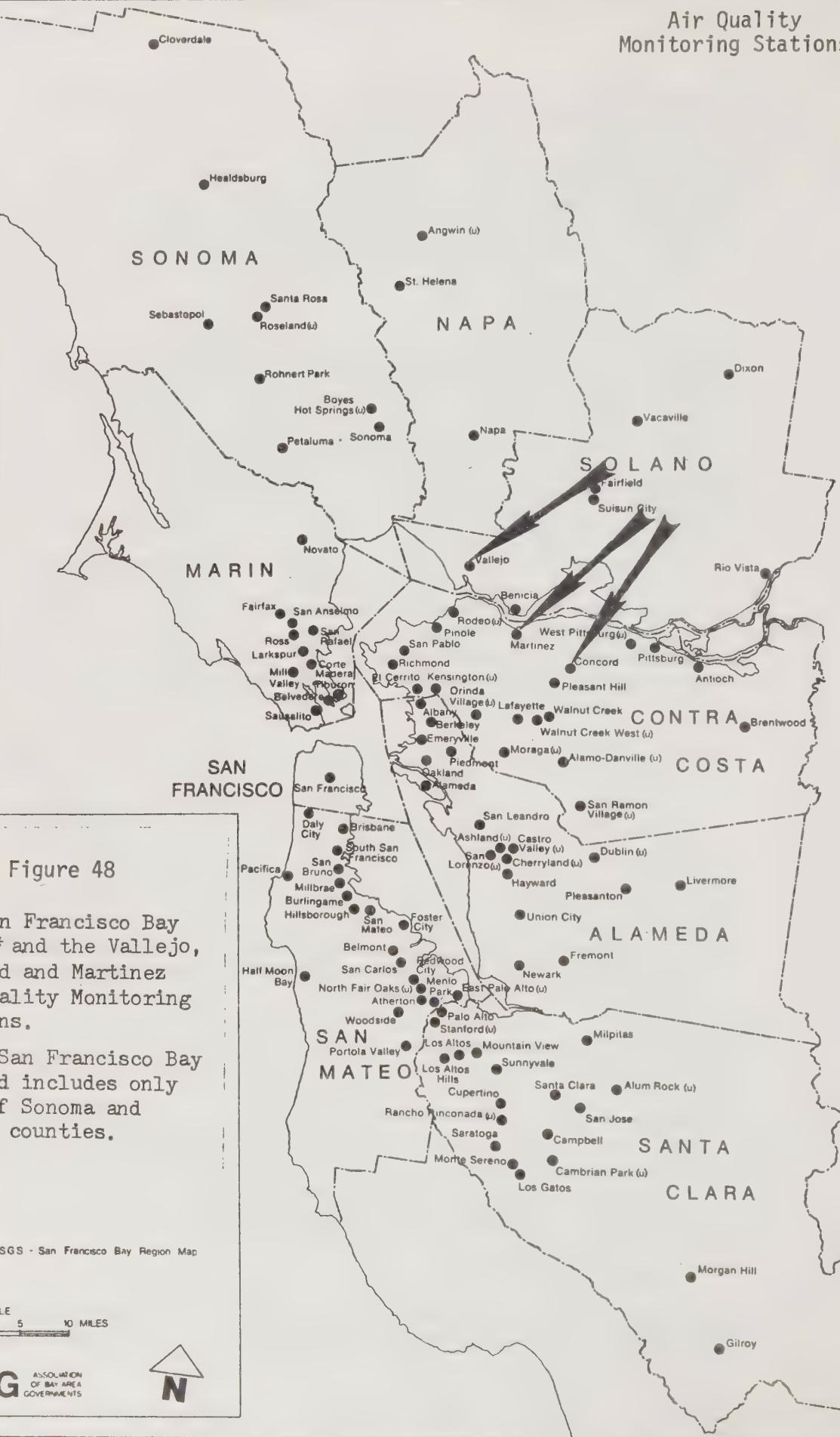


Figure 48

The San Francisco Bay Region* and the Vallejo, Concord and Martinez Air Quality Monitoring Stations.

* The San Francisco Bay airshed includes only half of Sonoma and Solano counties.

Source: 1970 USGS - San Francisco Bay Region Map

SCALE
5 0 5 10 MILES

ABAG ASSOCIATION OF BAY AREA GOVERNMENTS



Table 23

AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards		National Standards ¹		
		Concentration ²	Method ³	Primary ^{2, 4}	Secondary ^{2, 5}	Method ⁶
Oxidant (Ozone)	1 hour	0.10 ppm (200 $\mu\text{g}/\text{m}^3$)	Ultraviolet Photometry	160 $\mu\text{g}/\text{m}^3$ (0.08 ppm)	Same as Primary Std.	Chemiluminescent Method
Carbon Monoxide	12 hour	10 ppm (11 mg/m^3)	Non-Dispersive Infrared Spectroscopy	—	Same as Primary Standards	Non-Dispersive Infrared Spectroscopy
	8 hour	—		10 mg/m^3 (9 ppm)		
	1 hour	40 ppm (46 mg/m^3)		40 mg/m^3 (35 ppm)		
Nitrogen Dioxide	Annual Average	—	Saltzman Method	100 $\mu\text{g}/\text{m}^3$ (0.05 ppm)	Same as Primary Standards	Proposed: Modified J-H Saltzman (O_3 corr Chemiluminescen
	1 hour	0.25 ppm (470 $\mu\text{g}/\text{m}^3$)		—		
Sulfur Dioxide	Annual Average	—	Conductimetric Method	80 $\mu\text{g}/\text{m}^3$ (0.03 ppm)	—	Pararosaniline Method
	24 hour	0.04 ppm (105 $\mu\text{g}/\text{m}^3$)		365 $\mu\text{g}/\text{m}^3$ (0.14 ppm)	—	
	3 hour	—		—	1300 $\mu\text{g}/\text{m}^3$ (0.5 ppm)	
	1 hour	0.5 ppm (1310 $\mu\text{g}/\text{m}^3$)		—	—	
Suspended Particulate Matter	Annual Geometric Mean	60 $\mu\text{g}/\text{m}^3$	High Volume Sampling	75 $\mu\text{g}/\text{m}^3$	60 $\mu\text{g}/\text{m}^3$	High Volume Sampling
	24 hour	100 $\mu\text{g}/\text{m}^3$		260 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$	
Lead	30 Day Average	1.5 $\mu\text{g}/\text{m}^3$	High Volume Sampling, Dithizone Method	—	—	—
Hydrogen Sulfide	1 hour	0.03 ppm (42 $\mu\text{g}/\text{m}^3$)	Cadmium Hydroxide Stractan Method	—	—	—
Hydrocarbons (Corrected for Methane)	3 hour (6-9 a.m.)	—	—	160 $\mu\text{g}/\text{m}^3$ (0.24 ppm)	Same as Primary Standards	Flame Ionization Detection Using Gas Chromatogra
Ethylene	8 hour	0.1 ppm	—	—	—	—
	1 hour	0.5 ppm		—	—	—
Visibility Reducing Particles	1 observation	In sufficient amount to reduce the prevailing visibility to less than 10 miles when the relative humidity is less than 70%	(7)	—	—	—

NOTES:

- National standards, other than those based on annual averages or annual geometric means, are not to be exceeded more than once per year.
- Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. All measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of Hg (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- Any equivalent procedure which can be shown to the satisfaction of the Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.
- National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by the Environmental Protection Agency (EPA).
- National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated acute effects of a pollutant. Each state must attain the secondary standards within a "reasonable time" after implementation plan is approved by the EPA.
- Reference method as described by the EPA. An "equivalent method" measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
- Pervailing visibility is defined as the greatest visibility which is attained or surpassed around at least half of the horizon circle, but not necessarily in continuous sectors.

carrying fuels (such as gasoline) and of some industrial processes. High CO levels are generally found near freeways, congested intersections, and urban street canyons. There are two EPA ambient air quality standards for CO; a maximum 8-hour average concentration of 10 mg/m³ and a maximum 1-hour average concentration of 40 mg/m³, each to be exceeded no more than once per year.

The standards afford protection against the occurrence of carboxy-hemoglobin (COHb) in the blood of 2 percent or more. The COHb level in the blood is directly related to the CO concentration in ambient air since CO acts to displace oxygen from hemoglobin to form COHb. This in turn reduces the ability of the blood to distribute oxygen to body tissues. The populations most likely to be affected by ambient CO levels are preschool and school age children, whose high activity level places them in the category most quickly saturated with high COHb levels.

Table 24 shows the 1974-75 eight-hour maximum CO experience at Vallejo and Concord compared to the highest (San Jose) and lowest (Fremont) CO occurrences at stations in the Bay Area. The Federal one-hour standard has not been exceeded in the Bay Area within the last three years. Measurements are given in milligrams per cubic meter (mg/m³). The fact that Vallejo exhibits high CO levels and Concord low levels tends to illustrate the fact that CO concentrations are local in their buildup, being high near high traffic sources.

Table 24
Comparison of CO Experienced Near Martinez
and Comparative Stations

Highest 8-hour CO 1975 (mg/m ³)	Number of days 8-hour standard of 10 mg/m ³ was exceeded	
	1974	1975
Vallejo	12.6	14
Concord	8.4	1
San Jose	18.1	14
Fremont	8.6	0

In order to demonstrate the accuracy of the BAAPCD model (BAAPCD, 1975) to be used in estimating the impact of the proposed project on local air quality, five air samples were taken on and near the project site. Each sample was

collected continuously over a fifteen-minute period on Friday, September 10, 1976 between 11:00 a.m. and 2:00 p.m. Concurrent meteorological observations and traffic counts were performed with each sample. A light, generally north-west, wind (3 mph) was blowing. The sampling sites are shown on the neighborhood map, Figure 49, and the results are shown in Table 25. These results can be compared with the concentrations calculated or predicted with the BAAPCD model. The emission factors used for the predictions are those most recently published by the California Air Resources Board (CARB, 1976). As can be seen in Table 25, the BAAPCD method predicts lower concentrations for this area than were actually measured. It appears that the addition of a background factor of approximately 3 mg/m³ is necessary to account for traffic other than that on Pine Street. Since the measured concentrations occurred during a period of low wind and minimum pollutant dispersal, the combination of data from these measurements and the use of the BAAPCD model plus a background figure indicates that the project site is presently well below the one hour CO standard of 40 mg/m³. This site is also below the eight hour CO standard of 10 mg/m³, according to the calculation based on BAAPCD procedures, since the eight hour maximum is always less than one hour maximum.

The BAAPCD has estimated that 87 percent of the 3700 tons/day of CO emitted in the Bay Area in 1975 were due to motor vehicles. Traffic within Contra Costa County, in 1975, contributed 318 tons/day of CO, 10 percent of the amount emitted by motor vehicles in the Bay Area. There are several major individual industrial sources of CO in and near Martinez (BAAPCD, 1976).

ii. Nitrogen Oxides

The most important oxides of nitrogen formed during combustion of gasoline are nitric oxide (NO) and nitrogen dioxide (NO₂). Of the two, NO is most abundant in exhaust; NO₂, an oxidation product of NO, is the more harmful to human health and vegetation. NO₂ and other photochemical oxidants are formed by reactions with sunlight and appear as brown haze on days of poor air quality. Since these reactions require time, NO₂ and oxidant usually occur at some distance from the source of the NO_x and are of regional rather than purely local concern. That is, it is not always possible to identify a particular source emission which is the cause of a particular high level of NO₂. As a result there are several technical problems associated with the measurement, analysis and prediction of NO₂.

Stationary and transportation (automobile and aircraft) fuel combustion processes are both important sources of NO_x. The

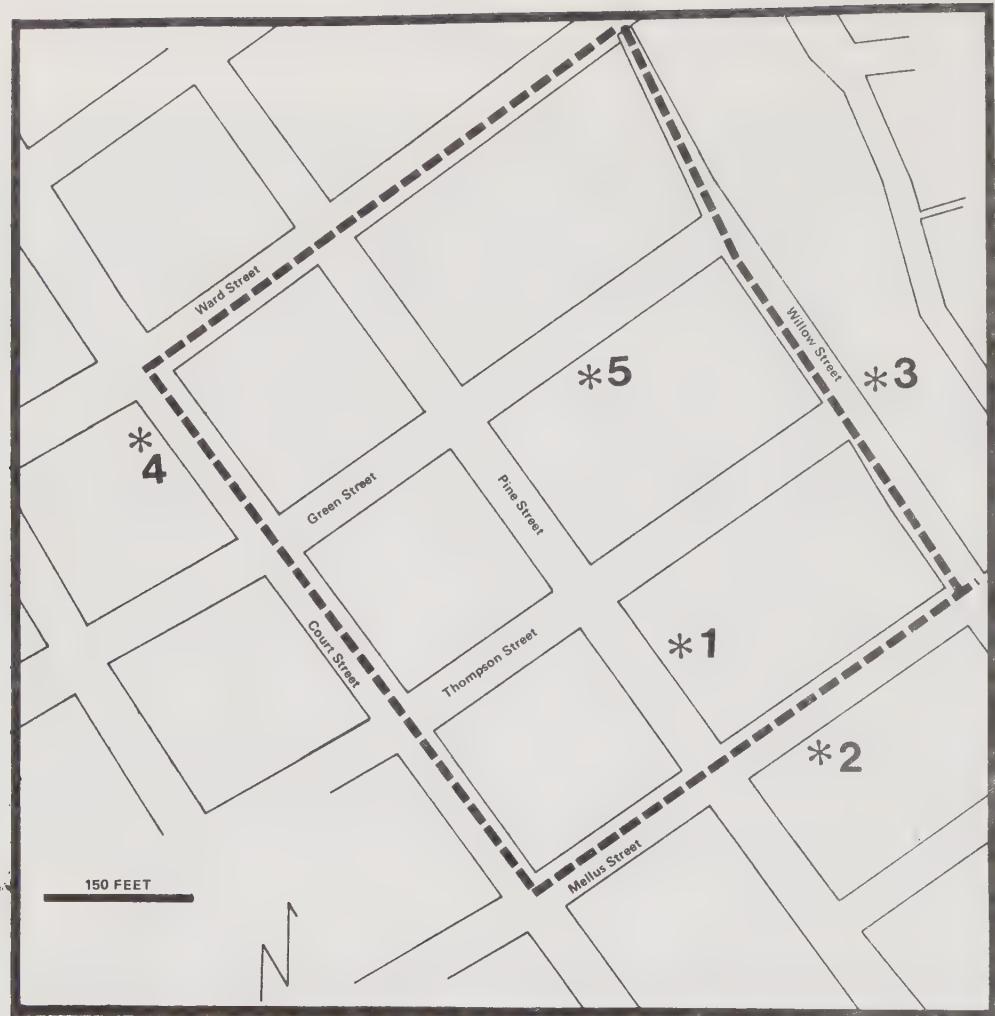


Figure 49. Locations of CO Air Bag Sampling

Table 25. Results of Carbon Monoxide Bag Sampling

Site	Time	Pine Street Traffic	Side Street Traffic	CO Concentration Measured mg/m ³	Calculated Maximum One Hour Concentration Using BAAPCD Methodology
1	1103-1118	202	not counted	5.2	3.9
2	1125-1140	218	7 (Mellus)	4.5	3.0
3	1149-1205	236	7 (Willow)	4.0	2.1
4	1218-1233	not counted	*	6.3	2.7
5	1346-1401	237	9 (Green)	5.7	2.3

*28 vehicles were counted on Court Street; 52 were counted on Ward Street.

common stationary sources include both industrial processes and heating of homes and plants by combustion.

The Federal ambient air quality standard restricts the maximum annual arithmetic mean (average) concentration of NO_2 to 100 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). There is an additional California standard of 470 $\mu\text{g}/\text{m}^3$ as a one hour average to be exceeded no more than once per year. The standards have been set to protect against two types of effects. In its direct health effects, NO_2 is associated with a variety of respiratory diseases among populations of all ages. It also affects vegetation, causing growth retardation and impairing water intake, especially in most growing plant types. These symptoms (on both people and plants) occur at concentrations near those measured in ambient air. In addition, NO_2 is an essential component in the natural production of photochemical oxidants (the effects of which are described later in this section).

Table 26 compares NO_2 concentrations measured at Concord, Vallejo, Fremont (the highest in the Bay Area) and Napa (the lowest). The Federal annual average was not exceeded in 1975 in the Bay Area; the State one hour maximum was exceeded once at one station (Fremont).

According to the 1975 BAAPCD source survey, 57 percent of the 660 tons per day of NO_x emitted in the Bay Area were due to motor vehicles. In 1975, traffic within Contra Costa County emitted 38 tons per day, or 10 percent of that in the Bay Area. Stationary (industrial) sources contributed 48 percent of the total NO_x emitted in the Bay Area. Eighty-one percent of the total NO_x emitted in Contra Costa County was due to such industrial uses as petroleum refining and generation of electricity.

The Martinez area does not appear to have a problem with high NO_2 levels, since it is between two stations where this standard is not exceeded. Contributors of NO_x in the area are local industries such as Shell Oil Company (BAAPCD, 1975).

Table 26
Comparison of NO_2 Experienced Near
Martinez and Other Stations in the Bay Area

Highest 1-hour NO_2 1975 ($\mu\text{g}/\text{m}^3$)	Number of days 1-hour standard of 470 $\mu\text{g}/\text{m}^3$ was exceeded	
	1974	1975
Concord	282	0
Vallejo	194	0
Fremont	470	0
Napa	188	0

iii. Hydrocarbons

The term hydrocarbons refers to many different substances which are made up of complex molecules contain carbon, hydrogen and oxygen in varying proportions. Hydrocarbons in the air come mainly from the processing, marketing, combustion and other use of petroleum products. The EPA standard for HC is a maximum 3 hour average of 160 ug/m³ which is to be exceeded no more than once a year and applies only to the period of the day between 0600 and 0900 hours. In addition, it applies only to the reactive hydrocarbons, which excludes the component methane, a simple organic gas present naturally in the atmosphere in concentrations on the order of 1000 ug/m³.

The standard is not set to directly protect against health hazards, apparently because of a lack of conclusive experimental data. It is known, however, that biologically active HC carcinogens are present in the atmosphere in far higher concentrations in urban and industrial areas than in rural regions.

Effects on vegetation occur due to at least one hydrocarbon-ethylene at levels on the order of those now found in urban ambient air. Ethylene is a normal plant hormone; in greater concentrations than are induced by nature, ethylene may produce growth retardation and sickness in all types of vegetation.

HC is produced in approximately equal amounts by transportation and industrial sources in the Bay Area although in Contra Costa County 72 percent of the HC in 1975 resulted from industrial rather than motor vehicle operations. Since the HC standard has been set in order to reduce violations of the oxidant standard, rather than to mitigate against the health effects of hydrocarbons, this pollutant is generally considered to be of regional, rather than local concern.

iv. Total Suspended Particulate

Particulate matter, either solid or liquid, consists of particles of varying size (2-30 microns) and composition. It may originate in nature or as a result of almost any human activities; dust, mist, ash, smoke, fumes and pollen are all particulate matter. There are five distinct State and Federal standards for total particulate concentrations, a California standard for a single component, lead, and various industrial safety standards for individual elements such as cadmium, beryllium and asbestos.

Only the ambient air quality standards are relevant to this study; these are given in Table 23. The primary standards are designed to protect the public health; the secondary

standards protect against effects on soil, water, vegetation, materials, animals, weather, visibility and personal comfort and well-being. The human health effects of particulate matter consists primarily of direct injury to the lung and introduction of various toxic substances deep into the lung. Plant injury occurs when particulate matter plugs leaf stomata (very small openings) thus reducing the exchange of gases necessary for growth and development. Other effects include the safety hazards inherent in reduced visibility, corrosion of metal and property damage through soiling. The particulate matter generated by tire wear and dust entrainment is often significantly greater than the exhaust particulate although techniques to accurately quantify it are not presently available.

While there are several state and federal standards for total suspended particulates, the two most often referenced by the BAAAPCD are the maximum annual geometric mean of 60 ug/m³ and the 24 hour maximum average of 100 ug/m³, to be exceeded no more than once per year. The history of suspended particulate concentrations in Concord and Vallejo is compared with that of two other stations representing the highest and lowest particulate levels in the Bay Area in Table 27. The Concord BAAAPCD station has not exceeded the annual main standard in the period 1972-1975; Vallejo exceeded it once, in 1974. Both stations exceeded the 24 hour standard occasionally.

Table 27
Total Suspended Particulate Levels

	1973 - 1975 Percent of days over 100 ug/m ³ (24 hour average) State standard		
	1973	1974	1975
San Jose	10.6	12.0	13.9
Vallejo	3.4	14.3	5.4
Concord	7.8	5.0	1.7
Redwood City	3.6	5.8	1.8

Only 28 percent of the 180 tons per day of particulate matter estimated by the BAAAPCD to be emitted in the Bay Area are motor vehicle emissions; 43 percent is due to miscellaneous industrial and commercial emissions. In 1975, 17 percent of the Bay Area particulate matter was emitted within Contra Costa County; motor vehicles and miscellaneous industrial and commercial sources contributed 3 and 14 percent, respectively, to the Bay Area total.

Lead may be the single most harmful component of particulate in the ambient air. California has adopted a standard for this element alone, allowing a maximum 30 day average of 1.5 ug/m³. The CARB has chosen to attempt to control atmospheric lead through controls on the gasoline lead content; a proposal to establish a nationwide ambient lead standard was determined to be too difficult to implement.

Lead concentrations have been steadily decreasing for the San Francisco Bay Area Basin, from a district average of 1.3 ug/m³ in 1970 to a 1974 average of 0.63 ug/m³. Recent data for the BAAPCD air quality monitoring station at Vallejo is compared with the San Jose station (which has the highest concentrations in the Bay Area) in Table 28. Lead, like carbon monoxide, is a pollutant which is at its highest concentration near its source. No lead data is available for Martinez.

Table 28
Number of Months Exceeding the Ambient Lead Standard at Selected Stations

	<u>1973</u>	<u>1974</u>
Vallejo	1	2
San Jose	5	2

v. Photochemical Oxidant

Photochemical oxidants (smog) are produced in the atmosphere when reactive organic substances (chiefly hydrocarbons) and nitrogen oxides are exposed to sunlight. The chief photochemical oxidants in California are ozone (O₃) and NO₂. There are Federal and California one hour maximum levels set for photochemical oxidants excluding NO₂; these are 160 ug/m³ and 200 ug/m³, respectively. The Federal standard excludes SO₂ as well as NO₂.

The health effects of oxidants are primarily respiratory; irritation of mucous membranes in the respiratory tract and reduced resistance to respiratory infection. Nasal and eye irritation in subjects of all ages have been observed at levels at or near the standards. Oxidants also damage plants, most commonly by growth retardation and leaf injury. Also, many materials deteriorate more rapidly in the presence of ozone than they do in natural circumstances.

Photochemical oxidants are a major air pollution problem in California generally and in the Bay Area in particular. Since

this pollutant obeys complex rules of formation involving the presence of sunlight, NO_x and HC, it is difficult to accurately predict the severity and location of oxidant standard violations. Nevertheless, the climatological patterns of Bay Area topography indicate that the highest levels will be found in the sheltered inland valleys, generally downwind of highly urbanized areas, during the April-October season.

Table 29 compares the oxidant history of stations near Martinez with that of Livermore and San Francisco at either end of the oxidant spectrum. The comparison is given in terms of number of days in excess of the Federal one hour standard of 106 ug/m³, since 1974.

Table 29
Comparison of Monitoring Stations near Martinez,
Livermore and San Francisco Oxidant Violations

	<u>1974</u>	<u>1975</u>
Livermore	65	28
Concord	14	5
Vallejo	15	10
San Francisco	1	0

Although oxidants are not measured in Martinez, this data agrees with a BAAPCD study which showed that Martinez is northwest of major oxidant problem areas (BAAPCD, 1974.) The study indicated that the number of days per year the .10 ppm oxidant standard was exceeded ranges from approximately 20 to 35 in Martinez, while in Livermore, the standard is exceeded 30 to 100 days per year. (These are based on 1969, 1970 and 1972 BAAPCD data.)

Thus, while the oxidant standard is not exceeded as often in Martinez as in other parts of the Bay Area, it is nevertheless, exceeded and its importance should not be disregarded. It should also be mentioned that Martinez contributes hydrocarbons and nitrogen oxides to formation of downwind oxidant concentration as discussed in the detailed description of those pollutants.

b. Noise

The major source of community noise in the study area is motor vehicle traffic; there is also some noise from trains for durations of a few minutes several times a day. The basic

unit for quantifying community noise is the A-weighted decibel (dBA). This unit weights the various frequencies of noise so as to approximate the response of the human ear. The dBA can be used with various scales in further describing community noise and highway noise in particular. Two scales, the L_{10} and the CNEL are used for this analysis (Chapter 17, p. 1).

The L_{10} is the noise level exceeded 10 percent of the time; this value has been widely used to characterize highway noise and it correlates well with surveys of human annoyance due to noise. The Federal Highway Administration (FHWA) has recommended maximum peak-hour L_{10} levels of 70 dBA for residential use and 75 dBA for commercial and industrial uses.

Community noise equivalent level (CNEL) is an average of daytime, evening and nighttime sound levels, with nighttime noise (10:00 p.m. to 7:00 a.m.) weighted most heavily (since nighttime noise is more annoying). The California State Building Code requires an acoustic analysis whenever a proposed residential non-single family development is in a noise climate greater than 60 CNEL (Title 25, California Administrative Code). The acoustic analysis must demonstrate that the proposed development is compatible with the existing noise climate (that is, that interior levels which are attributable to exterior sources shall not exceed 45 CNEL). The Contra Costa County Noise element recommends a maximum of 60 CNEL for residential land uses.

In order to assess the existing noise setting, seven noise measurements were made in and near the project area. The results of the measurements showed that noise in the area has not changed significantly from April, 1975, when a similar analysis was completed (Response Document and Second Appendix, Final EIR, Criminal Justice Detention Facility, 1975). This is to be expected, since traffic patterns are essentially unchanged, and traffic volumes have increased less than three percent. The results of both analyses are presented here. The measurement locations are shown in Figure 50.

The results of the measurements are shown in Table 30. L_{10} 's were calculated directly from the measurements, as were L_{50} 's. (L_{50} is the noise level exceeded 50 percent of the time.) CNEL's for the area were predicted from a mathematical model which was developed by the Highway Research Board and which is approved by the Federal Highway Administration. Parameters used in the predictions included average daily traffic, vehicle speed, heavy duty vehicle mix, roadway configuration topography and the presence of buildings between the noise sources and the receivers. Noise contours of existing CNEL's from Pine Street calculated from the model and the traffic



Figure 50. Locations of Sound Measurements (Sites 8 through 15 are from Acoustic Analysis of the Proposed Contra Costa County Criminal Justice Detention Center, April 4, 1975)

data are shown in Figure 51. The peak hour L_{10} levels along Pine Street, using the same model, are approximately 6 dBA higher than the CNEL levels.

Table 30
Results of Noise Measurements In and Near the Project Area

Date	Site No.	Beginning Time	Traffic (per 15 min.)	L_{10}	L_{50}
Sept. 10, 1976	1	11:00 a.m.	202	71	64
	2	11:25 a.m.	225*	58	53
	3	11:50 a.m.	243	55	49
	4	12:20 p.m.	80**	63	56
	5	1:45 p.m.	246***	60	54
	6	2:15 p.m.	2	52	47
	7	2:40 p.m.	208	71	64
March 31, 1975	8	9:45 a.m.	8	61	54
	9	10:10 a.m.	6	60	55
	10	10:30 a.m.	0	55	52
	11	11:00 a.m.	6	59	55
	12	11:20 a.m.	6	59	54
	13	11:40 a.m.	57	65	59
	14	12:05 p.m.	165	75	68
	15	12:25 p.m.	98	72	65

* 218 on Pine Street, 7 on Mellus Street

** 52 on Ward Street, 28 on Court Street

*** 237 on Pine Street, 9 on Green Street

The land uses adjoining Pine Street are presently exposed to what would be generally considered a noisy urban environment. Peak hour L_{10} levels greater than 70 dBA and CNEL levels above 60 CNEL render these land uses unacceptable for any exterior activities involving speech or other communications. While the residential areas southeast of Mellus are somewhat quieter than those parcels from Mellus to Escobar Street, they too receive exterior noise levels which would interfere with normal speech.

Interior levels in this area depend on the type of construction of the individual building. Normal residential construction with windows closed yields approximately a 24 dBA reduction in the intruding noise (EPA, 1974). By this criterion, therefore, buildings adjacent to Pine Street now provide sufficient protection from the high exterior noise levels to ensure that the intrusion of exterior noise sources does not exceed 45 CNEL (as recommended by the California State Build-

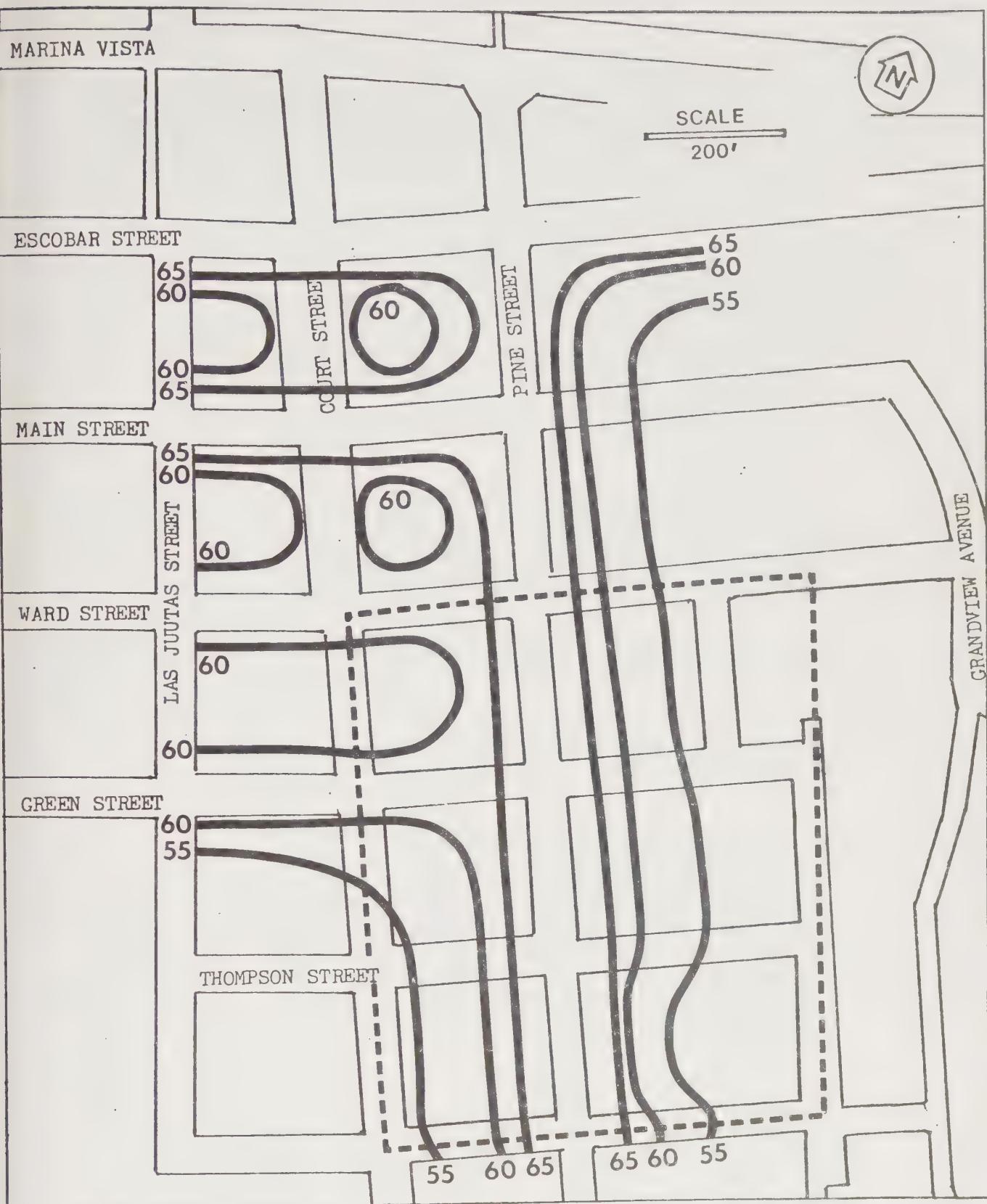


Figure 51. Existing CNEL Contours, Based on Computer Model of Existing Traffic Noise. (Peak Hour L_{10} Levels, Based on the Computer Model, are Approximately 6 dBA Greater than the CNEL Levels)

ing Code). This reduction factor, however, is generally an overestimate on older houses which are not well sealed around windows and doors. (It is an underestimate many times for modern homes with insulation in walls as well as roof.)

12. Historical and Archaeological Aspects (Background Report Chapters 9 and 10)

a. Native American

i. Archaeology

In September of 1976 an Archaeological Evolution of the proposed site for the Detention Facility was conducted. The study was carried out by Sonoma Foundation for Educational Development Inc., of the Sonoma State College, Rohnert Park, California. The study was under the direction of Dr. David A. Fredrickson and Mr. Peter Banks.

The following is a summary of the major findings of that investigation:

- (1) A literature and records search revealed no indication of any previously recorded archaeological or ethnographic site within the study area or in its immediate vicinity. It was found, however, that the Karquin, a Costanoan-speaking people, reportedly had a major town near present day Martinez in the pre-European period.
- (2) A thorough examination of all exposed ground surfaces within the study area yielded no evidence of archaeologically significant remains.
- (3) A subsurface sampling program that tested all portions of the project area yielded no evidence of archaeologically significant materials.
- (4) On the basis of available data, the authors conclude that no archaeologically significant remains are present within the project area. It follows, therefore, that no adverse impact upon archaeological resources would occur if the proposed facility were constructed at that location. Since archaeological materials were absent from the proposed construction site, no alternative approaches to accomplish project goals and no mitigation measures need be recommended. It also follows that no materials eligible for nomination to the National Register of Historic Places were present within the project area.

The project area consisted of approximately 7.5 acres. Approximately 20% of this area was covered by paved streets and sidewalks, 10% was covered by buildings, and 50% was covered by paved parking areas. Thus, only about 20% of the total ground surface could be visually examined without modification to pavement or other features that were present within the project area.

A subsurface sampling program was initiated which utilized power auger supplemented by compressor and jackhammer to penetrate paved parking areas, back-hoe, and hand auger. A total of 87 test excavations were made to an average depth of 56 inches (1.4 meters) with a mean distance between excavations of approximately 55 feet (16.5 meters). In the author's judgement, the sampling program provided sufficient information to allow accurate generalizations regarding the entire parcel.

For the purpose of this investigation, the proposed facility site was divided into six blocks, numbered from 1 through 6 (see Figure 52). Block identification numbers are listed on Table 31. The number of excavations, mode of excavation, and depth reached are listed on Table 32.

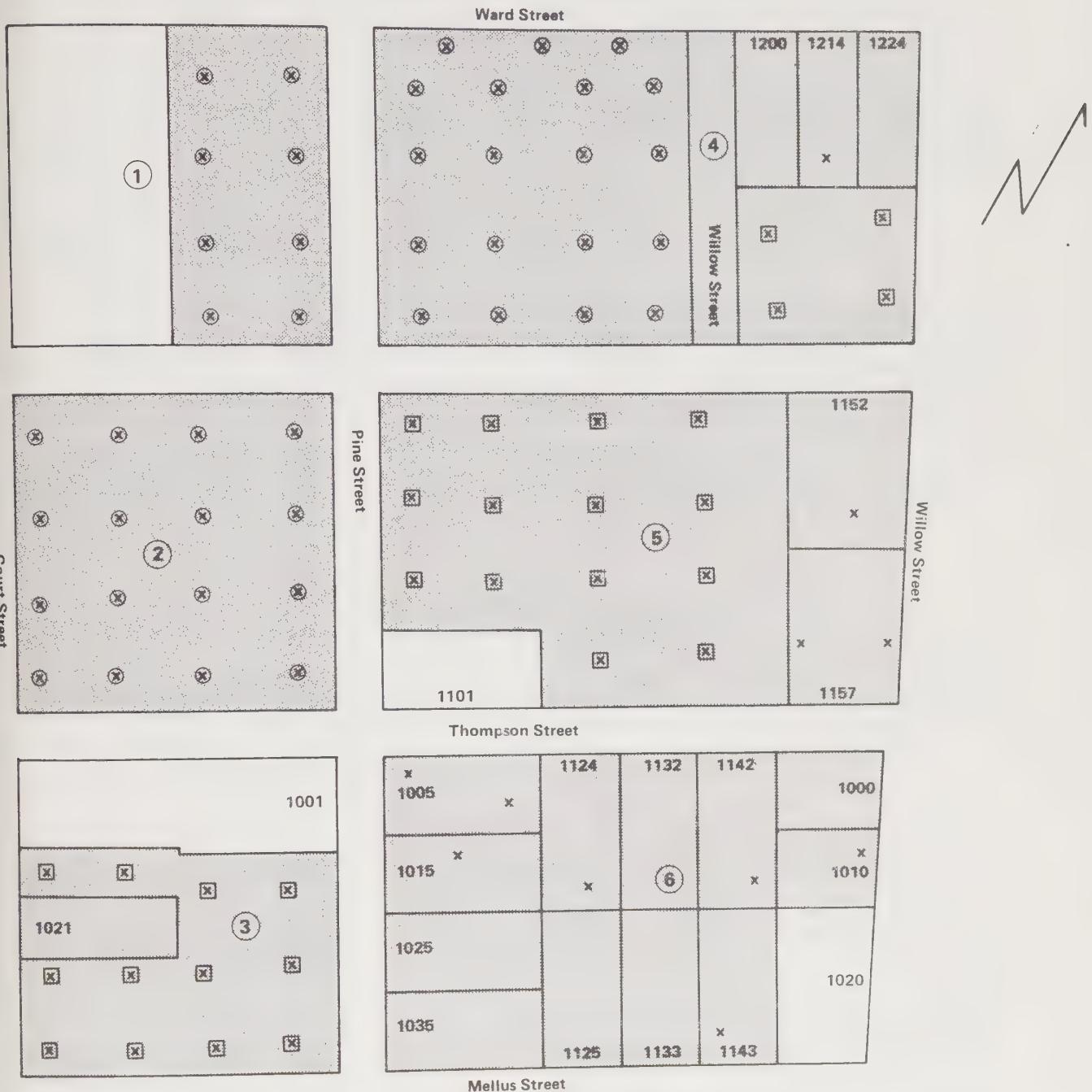
ii. History

The literature and records search for the proposed project revealed that the general area was home to the Karquin, a Costanoan-speaking people, during the period of initial European contact (Cook, 1957; Bennyhoff, 1961). Because the area south of Carquinez Strait and Suisun Bay had been depopulated by 1810 due to Spanish missionizing efforts, some difficulty was experienced by later scholars who attempted to reconstruct the contact period cultural relationships. On the basis of an analysis of mission records and other historical documents as part of his study of the Plains Miwok, Bennyhoff (1961:219ff) was able to place the Karquin as residing in the Martinez area.

The earliest human occupation documented for what is now Contra Costa County was about 4000 years ago at CCo-308 in Alamo, which lasted until about 1500 years ago. In the interior region of Contra Costa County, the economy of the early inhabitants was based upon the hunting of local game, most importantly the deer, and the collecting of local plant food, most notably the acorn. The primary hunting weapon was the dart, tipped with a relatively large stone projectile point and propelled with the aid of a throwing stick or atlatl. Projectile points, spear points, and chipped stone knives, all of which were comparatively rare, were manufactured from a variety of materials in a variety of shapes and appear for the most part to have been made from locally available materials or imported ready-made from non-local stone. Although trade relationships were clearly well established at this time, the social group did not appear to have been heavily dependent upon exchanges or imported goods.

Increasing numbers of beads and ornaments, including those made from clam shell, olivella shell, abalone shell, steatite,

Figure 52
Subsurface Archaeological Survey of Project Site



Plan of Proposed Detention Facility Site Showing Exploratory Holes Made during Subsurface Archaeological Investigations

⊗ - power auger

◻ - back hoe

✗ - hand auger, pick & shovel

■ county owned property

"A" - auger hole containing several historic artifacts

1" = 100'

Table 31
BLOCK IDENTIFICATION NUMBERS

Block No.	Boundaries:			
	West	North	East	South
1	Court Street	Ward Street	Pine Street	Green Street
2	Court Street	Green Street	Pine Street	Thompson Street
3	Court Street	Thompson Street	Pine Street	Mellus Street
4	Pine Street	Ward Street	Willow Street	Green Street
5	Pine Street	Green Street	Willow Street	Thompson Street
6	Pine Street	Thompson Street	Willow Street	Mellus Street

Table 32
EXCAVATION PROGRAM, BY BLOCK

Block No.	Samples	Average Depth	Mode of Excavation
1	8	72 inches	power auger
2	16	72 inches	power auger
3	12	48 inches	back hoe
4	19	72 inches	power auger
	4	48 inches	back hoe
	1	26 inches	hand auger
5	14	48 inches	back hoe
	3	24 inches	hand auger
6	2	36 inches	hand auger
	8	24 inches	pick and shovel

and magnesite, became available during the Late Horizon, suggesting that greater quantities of wealth were coming into the area and that social complexity was greater than during the preceding Middle Horizon.

Initial European contact with Karquin territory occurred in 1772 when a Spanish expedition headed by Pedro Fages followed the south shore of Carquinez Strait and Suisun Bay, afterward passing through the Concord and San Ramon Valleys on the return journey to Monterey. The first recorded Karquin baptism was recorded in 1810 and by this time, the Karquin area appeared to have completely lost its native population (Bennyhoff 1961:219ff).

b. The Spanish Era

Amerigo Vespucci made several voyages to the land discovered by Columbus and established that the land was not the Orient, but a new world. Thus, the name America was derived from his own. Within a few decades, the Spanish had extended their explorations to California. Juan Rodriguez Cabrillo, a Portuguese in the service of Spain, discovered San Diego Bay in 1542, and continued his exploration of the coast going north as far as Point Arena. However, he missed both the Golden Gate and Monterey Bay in a thick fog.

The Spanish discovered gold in the Americas. In turn, their enemies began to prey on their shipping. Due to the plundering of Spanish galleons by Francis Drake and others like him, the Spanish were forced to realize that harbors must be found and established along the California coast to safeguard the priceless cargoes of the galleons. In 1595, Sebastian Rodriguez Cermenio searched for the sorely needed harbors. He reached Drake's Bay, where he was shipwrecked, and named it San Francisco.

In 1768, Don Jose de Galvez, the highest Spanish official in Mexico since Cortez, was granted unlimited powers and directed the occupation and conquest of California. He resolved that the ports of San Diego, Monterey and San Francisco would be occupied. Under orders from the Spanish Viceroy in Mexico, Don Pedro Fages was to explore by land and sea the port of San Francisco. From Monterey he moved northward through what is now Santa Clara Valley. They generally followed the shoreline of the Bay up to Carquinez Straits and camped on Alhambra Creek on March 29, 1772. To avoid the low, marshy land on the north shore, they passed near Pacheco and entered a low range of hills near Willow Pass. From these hills they could see the Sacramento and San Joaquin River Delta. They camped near the San Joaquin River just east of Antioch. They then recrossed the hills and went south through the San Ramon Valley into Amador and Sunol Valleys and from there back to Monterey. Fages reported his discoveries to the Viceroy and the early history of the European settlement of the Bay Area and Contra Costa was initiated.

By 1806, Indian uprisings were becoming a serious problem, and Gabriel Moraga, son of the former explorer, was sent into Contra Costa to quell the uprisings. By 1810, the Indians were subdued, even though revolts continued to

flare spasmodically through the 1820's. During this period, more extensive surveying of Contra Costa's shore took place, which included naming of many present day points of reference.

For eleven years Mexico fought for independence from Spain, which was achieved in 1821.

c. The Mexican Period

During the first 10 years of California's possession by Mexico, life showed little change as compared with that of the Spanish period.

In 1833, a major change came to California. The Mexican government, following the original plans made by the Spanish crown when its colonial system was originally developed, began the process of secularization or transferring the mission lands to private owners.

The decree of the Mexican government calling for secularization was dated August 9, 1834. Its main provisions were that one-half of the mission properties were to be handed over to the Indians, and the rest to be under the control of secular administrators who were to support the church and to act in the general public interest. Unfortunately, the process of secularization proved to be detrimental for both the religious missions and the Indians.

d. Era of the Ranchos

The granting of ranches had occurred as early as 1784 under Spanish rule. In the intervening years the number of land grants remained small for two reasons: (1) California had remained a frontier area of Spanish culture and therefore did not look too inviting to prospective settlers; (2) more important, the choice lands, especially along the mapped routes, were held in trust by the Franciscans for the Indians and thus were not available.

Secularization of the mission lands brought about a rapid increase in land grants. Between 1834 and 1846, Mexican governors confirmed at least 600 private rancho grants. When the United States acquired California, most of the suitable land up to the Sacramento Valley was privately owned.

In applying for a land grant under Mexican law, the petitioner stated that he was a native-born or naturalized Mexican citizen; set forth the location, boundaries, approximate size, and identifying landmarks of the desired tract; testified that none of the land in question had been granted in a previous concession; declared that he was prepared to stock the holdings with a number of horses and cattle; listed the names of the neighboring ranchos; and supplied a *diseno* or rough topographical map of the property. The petition and *diseno* were placed in a file in the provincial archives.

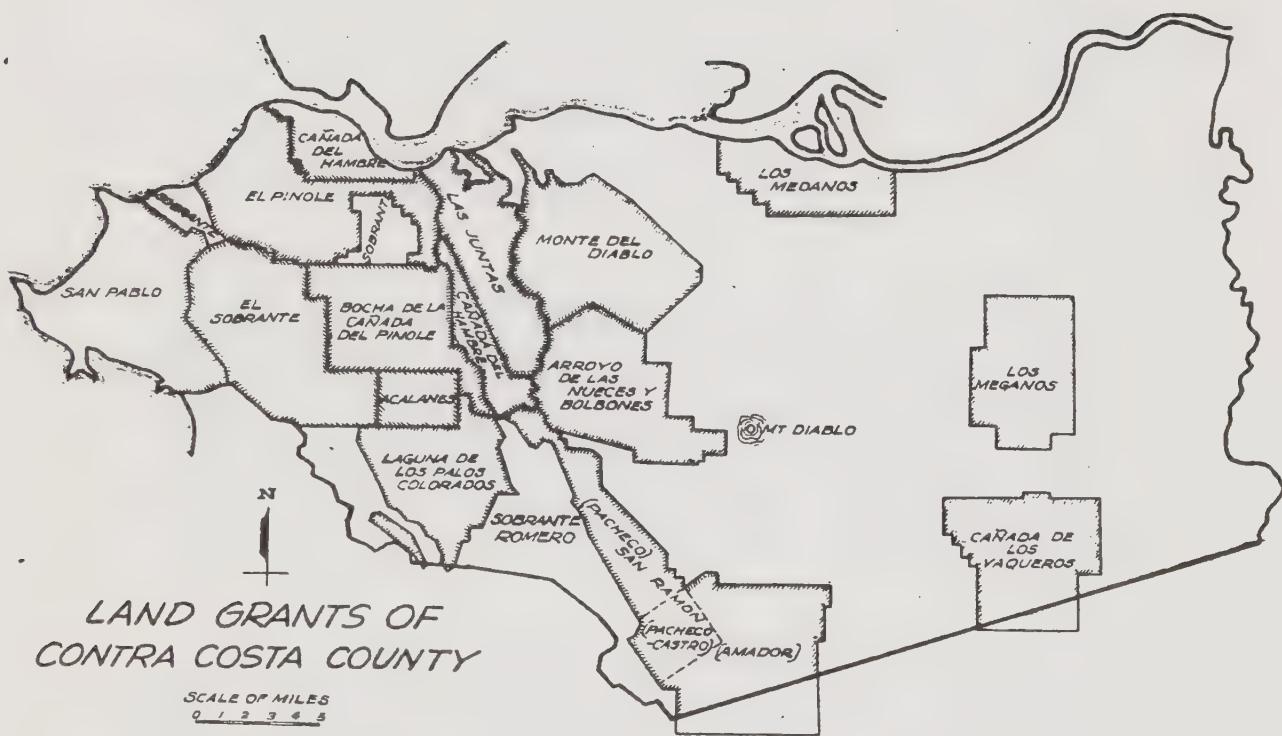
In Contra Costa, approximately 16 ranchos were granted by the Mexican government between 1823 and 1844. The reasons for the uncertainty of numbers include the lack of knowledge of the procedures involved in granting documentary title to land, inconsistencies and disputes in boundaries, partial acquisitions and the frequent change in Mexican governors. What is known is that it was the governor's absolute right to grant titles to land. Between 1822 and 1846, there were 14 Mexican governors; each had the "absolute" right to grant land.

The first ranchos in Contra Costa were Rancho San Pablo, granted to Don Francisco Maria Castro in 1823, and Rancho el Pinole, granted to Don Ignacio Martinez later the same year. Although both owners stocked their lands with cattle and built homes and other buildings of adobe, the frequent change in governors led to confusion in titles. Neither Castro nor Martinez had their possessions legally acknowledged and confirmed until 1834 and 1842, respectively. Figure 53 shows the Mexican land grants in Contra Costa. Apparently, all but one of the grants, Rancho las Juntas, were granted to Spanish Californians. Six other ranchos were either partially or entirely sold to Americans (or other anglos) prior to the American takeover of California in 1846.

After the acquisition of California by the United States and the inclusion of California as a state, Congress passed an Act in 1851 which established a Land Commission to settle all private land claims in the new State. Most of the rancheros in Contra Costa held undisputed titles to their lands, but some found their titles challenged and denied by the U. S. courts. Several of the ranchos, most notably Rancho San Pablo and Rancho Laguna de los Palos Colorados, were involved in long disputes and litigation among heirs and/or American squatters. When the first American settlers came to Contra Costa, the size and location of the land

Figure 53

Ranchos in Contra Costa County



Source: History of Contra Costa County; Purcell, 1940

grants left very little available land that they believed was fit for cultivation. There was little or no selling or buying of property. Some of the Americans became squatters, to the intense annoyance of the rancheros. Squatters' claims and fights in conjunction with partition suits instituted by heirs of the rancho families retarded the growth and development of the county for many years.

The City of Martinez is located within the former boundaries of Rancho las Juntas and Rancho el Pinole. The channel of Alhambra Creek was the dividing line between the two. The proposed Contra Costa County Detention Facility lies to the east of Alhambra Creek, and as such is located within the former Rancho las Juntas.

In 1850, after a townsite had been laid out on the west banks of Arroyo del Hambre Creek by Colonel Smith for the Martinez family, Thomas A. Brown, who had surveyed the location, was employed to survey an addition on the east banks of the same creek, which was part of Rancho las Juntas. Many of the homes of the first residents of Martinez were built on this addition and half of the present population resides on the east side of Alhambra Creek, which bisects the town.

e. Anglo Era

At the time Colonel Smith laid out the townsite of Martinez, a number of settlers were already in the locality. Elam Brown, Nathaniel Jones and others had brought their families and were pioneering in the area of Lafayette (Rancho Acalanes). Miners on their way to the newly discovered gold fields in the Sierra Nevada made the location a stopping place. Dr. Robert "Doc" Semple, a founder of Benicia and member of the Bear Flag party in 1846, was operating a primitive ferry to and from Benicia.

Interest in California had been aroused in the United States when, after the Mexicans allowed foreign trade, ships filled with hides and tallow returned to the east coast. The overland route had been opened by trappers and scouts as early as 1826. Liberal colonization laws passed by the Mexican government in 1824 allowed large numbers of American adventurers and settlers to come into the area year by year. The settlement of Contra Costa was furthered by the discovery of gold in 1848.

Conflicts among the various Mexican and native Californians, as well as the strong jealousy between northern and southern

California, made the possession of land extremely vulnerable to takeover. Fear of American "invaders" had led to a series of incarcerations and deportations of foreigners during the administration of Governor Juan Bautista Alvarado (1836-42). On June 14, 1846, a group of pioneer settlers, fearing another expulsion by Mexican authorities, declared the Bear Flag Republic. A month prior, unknown to the settlers, the U. S. had declared war on Mexico over other disputes in the Southwest. Apparently, when Commodore John D. Sloat declared California a U. S. republic on July 7, even he was unaware of the declaration of war.

At the close of the war in 1848, California was virtually without a government. Such as did exist, was partly military, partly civil, and with Mexican laws still in effect. When Brigadier-General Bennett Riley assumed the governorship in 1849, he acceded to the popular demand to form a state. After an election of delegates, the Constitutional Convention met at Monterey after which a constitution was ratified and state officers were elected by the people on November 13, 1849. There was at this time an estimated population of 107,000 in California: 76,000 Americans, 18,000 foreigners, and 13,000 native Californians. Persons casting votes for the constitution numbered 12,875 and 811 voted against it. Martinez cast a total of 41 votes. California was a self-constituted state with an organized state government for 10 months before it was admitted to the Union September 9, 1850.

f. Contra Costa County - Martinez as County Seat

During the interim government at the end of the war the military governors appointed alcaldes, prefects and sub-prefects throughout the state. Their duties roughly correspond to mayors, magistrates and police officers. Elam Brown, founder of Lafayette, and Napoleon B. Smith were made alcalde and sub-prefect of their district, respectively. Brown was later one of the delegates to the Constitutional Convention, and was elected assemblyman in the November, 1849 election.

As mandated by the constitution, the first legislature passed an act on February 18, 1850 which subdivided the state into 27 counties and established seats of justice within them. Contra Costa was one of these counties. Martinez was declared the County Seat. The first boundaries of the county included much of what is now Alameda County. The existing boundary was established on March 25, 1853 during the fourth legislative session at Benicia.

Prior to the establishment of the County, the town of Martinez consisted of three or four stores, a hotel, a blacksmith shop, a few small residences, and several saloons. When Colonel Smith laid out the town, he had hired Thomas Brown, Elam's son, to survey 120 acres into blocks 200 feet square, with town lots 50 feet wide and 100 feet deep. The cost of the survey was \$2,500, some of which was paid in lots. Thomas Brown, his brother Warren, and their brother-in-law, N. B. Smith, opened one of the first stores. The block bordered by Smith (now Alhambra Avenue), Castro, Henrietta and Susanna Streets was reserved as a Plaza. The land immediately bordering the creek was not included in the original survey and was called the "Carquinez Reserve." The first lots were sold for \$100 each. Most commercial development was in the area of Smith, Ruden (now Main), and Berrellessa Streets, and to the north toward the mouth of Alhambra Creek, where Doc Semple's ferry landed.

Establishing Martinez as the county seat encouraged the rapid development of the town. Many lots were sold to land speculators from San Francisco. Shortly after the legislative session, the widow of William Welch of Rancho las Juntas hired Thomas Brown to survey an addition to the town on the east side of the creek. As the county seat it began to attract many substantial business and professional men. Within a year Martinez had more than doubled in size.

The first county officials were elected in a general election in April, 1850. A total of 266 votes were cast, 63 in Martinez. Other precincts and their votes were New York (Pittsburg) (133), Moraga Redwoods (Canyon, Moraga) (19), and San Antonio (Oakland) (51).

"The first public building was a stone jail which was built in (June) 1850 on the west bank of the creek in Martinez at the bridge on the street leading back from the wharf," wrote Judge Thomas Brown in later years. "For the purpose for which it was intended, the building was a poor affair but, by carefully guarding the prisoners, some of them were detained until they were tried," he continued.

County business, along with school classes, church services and meetings, was conducted in Berryessa Adobe at Smith and Escobar Streets until 1855, when a court house and jail (in the basement) were constructed on a hill fronting the

straits. The architectural style was very similar to the present finance building, although considerably smaller, and stood slightly west of the present building. (Note: the existing Finance Building served as the courthouse until 1957, when the two buildings exchanged services. The building had a large dome until 1956, when it was removed for reasons of safety; the first courthouse also lacked a dome.) A large earthquake in October, 1868 badly damaged the old courthouse and extensive repairs became necessary. With all the effort, the building was never as safe as it had been, and it continued for years to be a constant source of worry to county officials. It was not until 1901 that a new courthouse was begun. By the time of completion two years later, costs totalled \$338,383.

g. Development of Modern Martinez

Shortly after the County Courthouse was constructed, Martinez incorporated; the initial attempt to incorporate came in 1856 with actual incorporation following 20 years later in 1876. During this period, and the succeeding years to the turn of the century, Martinez grew as a trade center with various businesses utilizing the port.

During the 1850's and 1860's, Contra Costa County prospered as an agricultural region and Martinez became a focal point in this development. In 1853, Dr. John Strenzel established the first muscat vineyards and fruit tree orchards on his property in Alhambra Valley. By 1875, the Contra Costa Gazette, established in Martinez in 1867, reported that "Today the whole face of the arable part of our county is one waving field of grain." This indicated the growing importance of what as an agricultural product. Located near Martinez along the Carquinez Straits, were 23 warehouses storing what and other agricultural produce. In 1867, a flour mill was established in Martinez to mill the wheat and in 1876, Grangers' Warehousing and the Business Association of Contra Costa County located warehouses in Martinez. The intention was to develop Martinez as an extensive shipping port. While these latter plans never materialized, the Martinez port grew from the 1870's to the turn of the century as a salmon fishing and canning center. Two such canneries were established in Martinez, and by 1900, over 200 boats operated in the Carquinez Straits.

Other business expansion in Martinez during this period included the discovery in 1862 of paint deposits on the

bank of Alhambra Creek and the setting up of grinding machinery for a short time. Martinez was used as a stop for the Pony Express, the State & Freight Lines, and the Central Pacific Railroad.

With the turn of the century, industry began to move into Martinez. In 1914, Shell Oil of California moved into Martinez along with the Tidewater Oil Company at Avon. In 1915, the Mountain Copper Company, the American Oriental Company, and the Alhambra Municipal Water Company all located in Martinez. The 1920's brought rapid population growth from immigration, which was experienced throughout the United States. By the 1930's, the population in Martinez had grown by 69%. In the 1940's, however, population growth increased by only 12% and had begun to locate in Alhambra Valley and Vine Hill away from the downtown City area. During these two decades, business in Martinez only increased by 30%. During the 1950's and 1960's, commercial development slackened in Martinez. In this period two commercial enterprises located in Martinez for 25 years closed and moved to the Central County region, Montgomery Wards and J. C. Penney Company, and the theatre closed. In 1957, commercial fishing was forbidden between Pittsburg and the Carquinez Bridge, thereby ending the commercial fishing industry in Martinez.

During this period, County government began expansion. In 1932, the Hall of Records was constructed; in 1954, the Administration Building (now the North Wing) was built; in 1956, the Dome was removed from the Courthouse and it was remodelled. At this time the Courthouse became the present Finance Building and the Hall of Records became the Courthouse. In 1956, the County Hospital was built on Alhambra Avenue. In 1957, the Public Health Department Building was constructed and the County presented a 15-year plan for construction of other County buildings within the City of Martinez. This plan was modified and in 1963 became the Civic Center Plan. In 1963, the 12-story Administration Building was constructed in Martinez as part of the first phase of the Civic Center Plan.

Since the decline of commercial enterprises over the years since 1940 and the expansion of County buildings in Martinez, the City has experienced a marked change in its residential nature. Martinez began this century as one of the largest cities in the County, but declined as other cities in the County grew. Between 1960 and 1975, however, Martinez has

had a resurgence in population. The population has almost doubled from 9,604 to 18,702 in the last 15 years, but this has occurred largely due to the annexation of Vine Hill and Mountain View, over one-half of the City's population, and is located in suburban neighborhoods in the southern part of the City south of Highway 4.

As a result, Martinez, once a commercial port, has developed into two distinct areas: the old, industrially oriented City to the north, and the expanding, suburban community to the south.

h. Historic Resources

A recent inventory of historic resources was prepared by the County Planning Department in 1976, which recognized a number of historic structures in the Martinez area. None of these are within the proposed Detention Facility site. The structures are listed in the following table (Table 33) and shown on Figure 54.

Table 33

HISTORIC SITES AND STRUCTURES OF THE MARTINEZ AREA

<u>RESOURCE/LOCATION</u>	<u>EVALUATION CATEGORY</u>	<u>SIGNIFICANCE/IMPORTANCE</u>
1 MARTINEZ CEMETERIES Carquinez Scenic Drive West of Martinez	<u>Site Relating to Important Person in History</u>	Earliest burial ground in the County. Many notable pioneers, including Salvio Pacheco, Fernando Pacheco, the Martinez family, Joseph Reddeford Walker and Elam Brown, are interred here. Catholic Cemetery is on south side of road and Protestant on the north.
2 GRANGERS WHARF Martinez Waterfront	<u>Site of Historic Event</u>	In 1876, the wheat and fruit growers built a wharf for handling their shipments. It was also the site of an Italian fishing port. Some original pilings still remain along with evidence of washing tanks for fishnets.
3 MARTINEZ-BENECIA FERRY LANDING Foot of Berrellesa Street on Carquinez Strait	<u>Site of Historic Event</u>	Site of original ferry crossing established by Robert Semple of Benicia in 1847. It was a principal crossing for 49ers on their way to the mining areas. When the shoreline silted up, the landing for the ferry was shifted east to what became Ferry Street. In 1860, the first west bound pony express rider crossed here enroute to Oakland.
4 SOUTHERN PACIFIC RAILROAD DEPOT	<u>Structure of Historic Significance</u>	Circa 1876, work started on the railroad and on September 25, 1877 the first passenger train with Leland Stanford aboard went through Martinez.
5 COUNTY COURTHOUSE Main and Court Streets	<u>Site of Historic Event</u>	Original courthouse for Contra Costa County was built in 1855. It faced Escobar Street and the Carquinez Strait. It has a bell, cast in New York and carried around Cape Horn by a sailing vessel. Original structure was replaced in 1901 by what is now the County Finance Building.
6 MARTINEZ GAZETTE BUILDING Main and Court Streets	<u>Structure of Historic Significance</u>	Past home of Martinez Gazette, one of California's first newspapers and in continuous publication since 1858.

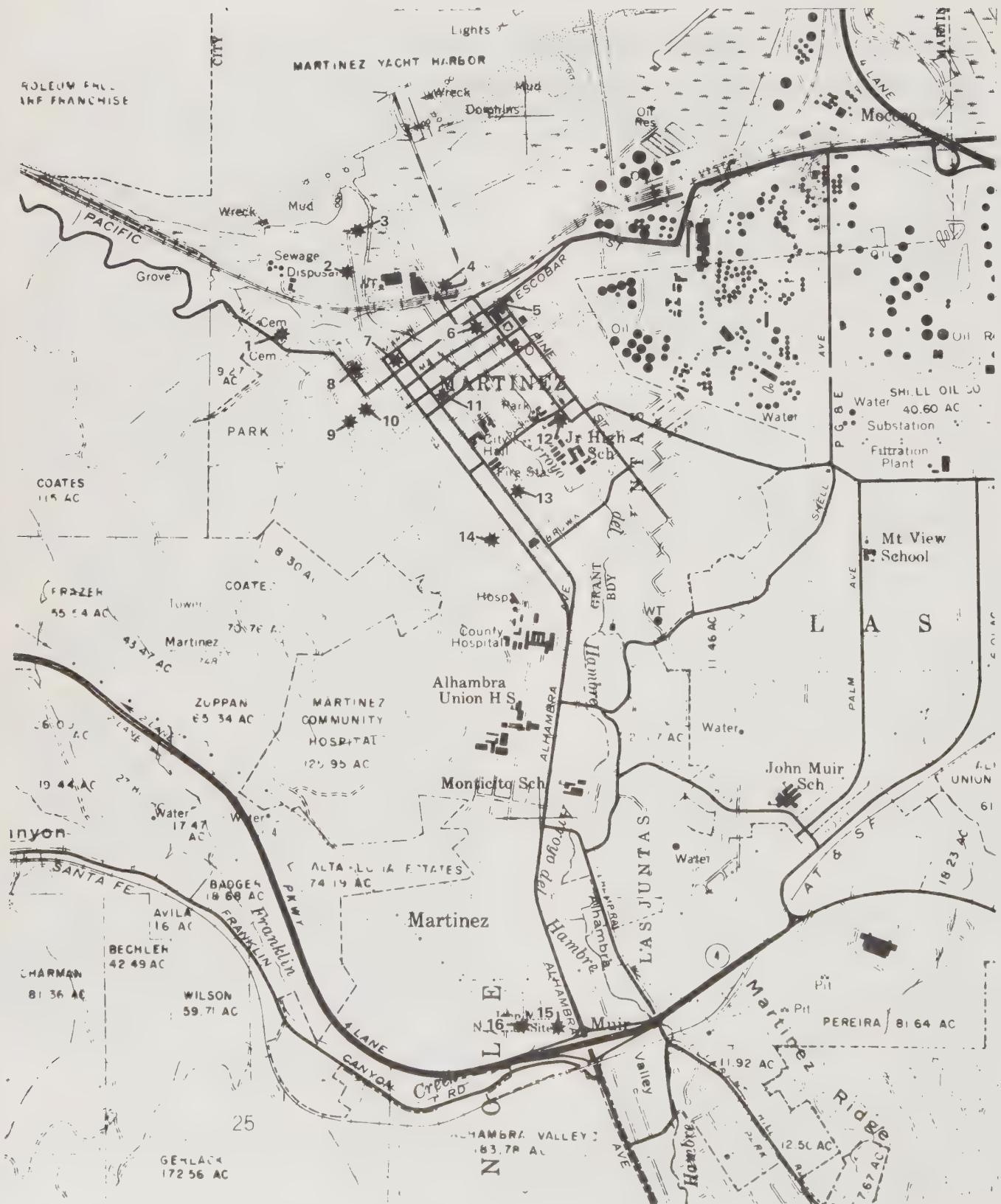
<u>RESOURCE/LOCATION</u>	<u>EVALUATION CATEGORY</u>	<u>SIGNIFICANCE/IMPORTANCE</u>
7 BERRYESSA ADOBE Escobar and Alhambra Ave.	Site of Historic Event	Circa 1850, Jose del los Santos Berryessa built his adobe at this site. His wife was Francisca Martinez, daughter of Ignacio Martinez, grantee of Ranch El Pinole. Before the courthouse was built the second floor was used for County business. First meeting of Martinez Masonic Lodge was held here in 1854.
8 BUNKER HOME 235 Marina Vista	Structure of Historic Significance	Built in 1877 by the publisher of the Martinez Gazette, R. R. Bunker. The structure is presently being restored.
9 TUCKER HOME Talbart and Escobar Streets	Structure of Historical Significance/ Architectural Specimen	Circa 1880, a sea captain named Tucker built this Victorian home which is now being restored by its owners. This two story structure has a truncated roof with a full basement and an open veranda with decorated pillars. Window detail is segmental with decorated labels.
10 TENNENT HOME Talbart and Escobar Streets	Structure of Historic Significance/ Architectural Specimen	Dr. John Tennent, son of Dr. S. Tennent of Pinole built this Victorian style structure in 1888. The 2½ story home has a high hip roof and a tower extending from the first and second story topped by a tiered roof. Main floor is elevated on a full basement.
11 STEWARTS GROCERY Castro and Ward Streets	Structure of Historic Significance/ Architectural Specimen	Circa 1879, James Stewart built this general grocery and fruit store and engaged in mercantile pursuits after many years of farming. A western style structure with false front, low gables and a stepped parapet for roof trim.
12 WITTENMYER HOME Arreba and Richardson Streets	Structure of Historic Significance	Circa 1890, Lewis Cass Wittenmyer built this home. Wittenmyer was County Clerk 1876 and instrumental in the incorporation of Martinez as a city in that year.
13 PAUL'S PLACE 1521 Alhambra Avenue	Structure of Historic Significance/ Architectural Specimen	A Victorian home built by Kelly in 1880. The exterior Victorian styling has been maintained although the interior has been altered and used as a restaurant since 1930.

<u>RESOURCE/LOCATION</u>	<u>EVALUATION CATEGORY</u>	<u>SIGNIFICANCE/IMPORTANCE</u>
14 ALHAMBRA HIGH SCHOOL 921 Susana Street	<u>Site of Historic Event/Site Relating to Important Person in History</u>	School classes were held from 1902 to 1921 in the imposing two story wood structure once on this site. John T. Swett was a member of board of trustees. Site is now occupied by offices of Martinez Unified School District.
15 JOHN MUIR HOME 4202 Alhambra Avenue	<u>Structure of Historic Significance/Architectural Specimen</u>	Dr. John Strentzel, noted horticulturist, built this 17 room Victorian mansion in 1882. In 1890 it became the home of Strentzel's son-in-law, John Muir, noted conservationist and author. John Muir lived here the last 24 years of his life and wrote many books that had profound effect on conservation and the national system of forests and parks. The home, known as the John Muir Home, is now owned by the National Park Service and has been restored to the 1906-1914 era. In recognition of John Muir's contribution to the nature lore of our nation, President Johnson signed a measure in 1964 that established the John Muir National Historic Site on the National Register of Historic Places. Also designated as a California Historical Landmark #312.
16 VINCENTE MARTINEZ ADOBE 4202 Alhambra Avenue	<u>Structure of Historic Significance/Architectural Specimen</u>	In 1849, Vincente Martinez built this adobe which still stands as a reminder of the County's original 57 historic adobes and one of Contra Costa County's oldest Spanish dwellings. The Adobe is part of the John Muir National Historic Site. Other owners of the property included Edward Franklin (1853) after whom Franklin Canyon was named, then Thomas Redfern and later Dr. John Strentzel (1874) whose daughter would later become Mrs. John Muir. It has been stated that the Martinez adobe with its two story wooden veranda typifies New England influenced California architecture of the 1840's. California Historical Landmark #511.

Source: Preliminary Historic Resources Inventory, Contra Costa County; Contra Costa County Planning Department, 1976.

Figure 54

Historic Sites and Structures
of the Martinez Area



13. Energy (Background Report Chapter #15)

This section of the Environmental Impact Report for the proposed Contra Costa County Detention Facility is intended to satisfy the requirements of the California Environmental Quality Act of 1970, with revisions; Division 6, Title 14, of the California Administrative Code, Sections 15000 to 15166 and appendices; and Energy Conservation, Guidelines for Evaluating New Development in Contra Costa County. (Interactive Resources, Inc., Energy Conservation, Guidelines for Evaluating New Development in Contra Costa County, California. Martinez: Contra Costa County Planning Department. May 1976.)

A careful energy analysis of the proposed project is essential because it is a very large structure and because a considerable portion of its operational costs will be attributable to energy.

This report was prepared while the design of the proposed Detention Facility was in a formative stage. It was thought that this early timing would provide the opportunity for information on energy to be considered during the design process, but it was also recognized that this approach placed emphasis on evaluating the project's energy potentials while limiting its evaluation of the design itself.

The process of extracting, processing and distributing energy resources not only affects the natural environment but, as we have seen recently, the associated and generally increasing costs can have profound economic and social affects as well. Concurrently, there has been an increasing recognition that the general patterns of urban development, as well as the specific characteristics of buildings, can have an important impact upon the manner in which energy is utilized.

In recognition of this need to plan for energy conserving development, the State of California has required that new projects in the state be evaluated to determine their effect on energy consumption, with an identification of ways to reduce wasteful use of scarce fossil fuels.

a. Energy Utilization Analysis

Using published data and new data pertinent to existing similar facilities, a review was made of the expected magnitude of energy utilization for the proposed project by energy type, demand, and peak loading factors. Several authorities agree that there are only half a dozen detention facilities existing within the United States that are similar in design to the proposed Contra Costa County Detention Facility. An effort to

obtain utility records for these similar facilities was only partially successful. Two of the six facilities were so new that no utility history had been established, and a third is part of a larger complex which has no sub-metering for the detention functions above.

In addition, the United States Department of Justice, Bureau of Prisons, maintains detailed records of energy use within its system for both building operations and fuel for vehicles and equipment. The records for 1975 were obtained along with the average number of inmates so that a system-wide average energy use per inmate could be calculated. These data provide an additional comparison for building energy consumption as well as an indication of the expected requirement for operation of vehicles.

For consistency with the State of California's format for energy analysis the British Thermal Unit (BTU) has been used as the basic energy unit in this report. Since measurements of large scale energy use often range into billions of BTU's or more, energy use tables in this report often are expressed in therms; one therm equals 100,000 BTU's. While the therm is commonly associated only with natural gas consumption, for the purposes of this report it is used for general measurement of energy use.

An estimate of the energy required to construct the project may be calculated using the methods outlined in the Contra Costa County Guidelines. (Interactive Resources, Inc., Energy Conservation, Guidelines for Evaluating New Development in Contra Costa County, p. 6.) The following assumptions were made:

- (1) The construction cost including demolition and clearing of the site is approximately \$20 million.
- (2) The midpoint of construction will be the second quarter of 1978.

Using Table 1.1 in the Guidelines, under the heading "New Construction, Non-residential," the third quarter 1975 energy input estimate for project construction would be: $\$20,000,000 \times 24,000 \text{ BTU/Dollar} = 4.80 \times 10^{11} \text{ BTU}$ or $4.80 \times 10^6 \text{ therms}$.

With construction costs inflating at approximately 0.75 per cent per month, (Ibid., p. 6) the energy input per dollar would be reduced at an equivalent rate. For the second quarter of 1978, the energy input would be reduced by a factor of 18 per cent, as follows:

$$\frac{4.80 \times 10^{11} \text{ BTU}}{1.18} = 4.07 \times 10^{11} \text{ BTU or } 4.07 \times 10^6 \text{ therms.}$$

This figure includes \$2.9 million for consultants, architects and administrative fees. Interactive Resources feels that this amount is insignificant for calculation purposes because some of these activities also consume certain amounts of energy (personal communication, Mr. Thomas Butt, January, 1977).)

Calculations of energy consumption using the day-degree method relating type of use was not done for this project because of its large size and its rather unique intended purpose. These methods, outlined in the Contra Costa County Guidelines, are generally intended for residential developments, i.e., new housing subdivisions.

b. Energy Consumption of the Existing Jail Building

The existing jail consists of 14,476 square feet of floor space of which approximately 90 percent is living space. The average inmate population is 155 with a maximum of 190. Space and water heating is by steam which originates in a gas-fired boiler located in the Court House. Utility records covering the past four years were obtained from PG&E and were averaged to obtain estimates of yearly consumption. Since gas usage is not sub-metered for the jail, the overall consumption of the three adjacent buildings was pro-rated by area with the jail allocated 13.8 per cent of the total usage. The totals are summarized in Table 34. The peak electrical demand of the existing jail was 47 KVA (kilovolt amperes) recorded in October 1976. (Sturgeon, J. J., Richmond Office, Pacific Gas and Electric Co., December 7, 1976.)

Table 34

ESTIMATED YEARLY ENERGY CONSUMPTION
EXISTING CONTRA COSTA COUNTY JAIL

Use	Electricity/Year KWH (Therms)	Gas/Year Therms	Total/Year Therms
Building Operations	308,772 (10,535)	6,189	16,724

II. Impact Analysis

A. Environmental Impact of Proposed Project

This section of the Environmental Impact Analysis discusses all impacts, both those of major significance, and those of lesser significance. The reader will find that some impacts discussed appear, when examined separately, to have little if any effect. However, some of these small impacts may have greater significance when viewed from a cumulative or aggregated perspective. Listed below is a summary of impacts identified as significant. These also appear in the summary at the front of this document. The adverse and unavoidable impacts are identified in the next section of the report (II.B.). The subject matter in this section is discussed in the same order as it appeared in the preceding "Inventory" section.

Significant Impacts

The proposed project creates the greatest physical impacts of the five (5) Civic Center alternatives considered

Of the 4 sites and 5 alternative designs, the proposed project creates the most traffic, parking, noise, and air quality impacts (Sections 4 and 11, the number indicates the numerical designation for the subject - please consult the table of contents).

Loss of visual buffering from Civic Center

Construction of the project will require the removal of existing structures which currently "buffer" and visually reduce the obviousness of the Civic Center, primarily from the east and south (Sections 1, 2 and 9).

Reduction of "small town" appearance

The proposed structure is large and will contribute to the Civic Center's tendency to interject a "city" atmosphere. The reduced desirability of the eastern and southern areas for residential use as a result of this impact is possible (Sections 1, 2 and 9).

High operational costs

As proposed, the project will cost approximately \$3.7 million annually to operate. This will be a significant impact upon the County's budget (Sections 1, 3 and 10).

Increased traffic congestion will result from the project

Heavy congestion at the corner of Ward and Court Streets during the P.M. peak hour can be expected. The two main reasons are: 1) a major portion of the proposed parking area on the site will exit on Ward Street, 2) existing stop controls at that intersection will slow traffic flow (other

streets will have an increased traffic burden but no other significant impacts were identified by the traffic and parking consultants). (Section 4)

The proposed project will use most of the remaining Civic Center area, leaving virtually no room for future expansion

The project as proposed (including parking) leaves little, if any, land specified in the 1963 Civic Center Plan for future development. This means that if County government is to expand in Martinez, more land will probably be required for either structures or parking. This assumes that the existing structures would remain. (Section 5)

The proposed project will create significant construction noise and significant increase in traffic noise on Court Street

(Sections 4 and 11)

The proposed Detention Facility will create significant impacts relating to energy use

Construction and operation of the Facility will consume large amounts of energy. The construction energy use is essentially unavoidable. The operational energy cost can only be partially reduced (Sections 3 and 13).

1. Physical Impacts

a. Impact on Physical Setting

The primary effect of the project on the physical setting will be a limited rerouting of the grid-patterned streets in the downtown area of Martinez. This break in the uniform city block pattern will be especially noticeable since one of the main entrances to the Civic Center, Pine Street, will be diverted.

At this time Pine Street affords a direct path to the Civic Center, the new building will block views toward the Center and Carquinez Strait, and of the east hillside area. The present immediately apprehendable urban form of the town will be partially obscured.

The waterfront, which is being developed as a regional park, will not be affected by the project, since the site is not visible from the waterfront, nor is the waterfront visible from on-site.

b. Impact on Area Character

The Detention Facility project will be similar to existing County buildings in its massive scale, grey color and uniform texture, and will be in keeping with the "cityscape" character of the Civic Center, as contrasted with the "townscape" character of the older

part of Martinez. By replacing one full block of existing one- and two-story frame and stucco residential buildings plus three other buildings on adjoining blocks within the site, the project will extend the "cityscape" character of the County buildings further into the "old town" of Martinez. The County Civic Center boundary will become more clearly delineated, since the project boundaries coincide with the Civic Center boundary.

c. Impact on the Site

The project's major visual impact on the site will be removal of the existing residential and office structures on the block bounded by Mellus, Willow, Pine and Thompson, one residential structure and one office building on the block bounded by Willow, Pine, Green, and Thompson; and the office building at the southwest corner of Thompson and Pine. A second house at the corner of Willow and Green Streets may remain if parking for 450 cars is adequate and if a sewage line can be rerouted.

The site is now a mixed use area with permanent and temporary parking lots, vacant areas, and small structures but it visually merges and blends with the surrounding neighborhood and downtown. The project will visually transform the site into an area of high visual organization with definite boundaries. The character of that portion of the site which is now residential will be permanently altered.

Within the site, views from ground level toward the south and the downtown will be blocked by the presence of the four-story building. Views of the East Hillside residential neighborhood will be more exposed due to removal of existing buildings along Willow Street. Views toward the north and the rest of the Civic Center site will remain essentially unchanged. Views of surrounding areas will be more exposed from within the upper floors of the detention facility. Existing view corridors from within the site will be blocked.

d. Impact on Viewshed Areas

All viewshed areas will experience a high degree of visual impact from the site periphery, that is, from the edge of the area which is contiguous with the site.

1. East Hillside

This area has a high degree of vulnerability due to its elevations above the site and the orientation of most residences facing the site. Willow Street residences will experience the greatest uniform impact as a result of removal of existing structures along the site edge of Willow Street. Views from other residences, especially from second stories, and at some locations from ground

level, will be exposed to the site parking areas and the proposed building.

2. County Civic Center

The Civic Center viewshed area has the largest number of potential viewers, but a low vulnerability because of infrequent opportunities for viewing the site, limited for the most part to noon time pedestrians and views from office windows, very few of which face the site. Views of the project will be of the north face of the building, the court annex and parking areas. From the Administration Building, south-facing windows will have a full view of the entire project.

3. Downtown Martinez

The major impact on the Downtown viewshed will be experienced by motorists traveling north-south on Pine and Court Streets, and on streets entering these streets from downtown. The building will partially block views across town to the East Hillside, and will form a visual barrier between the two parts of the town. The visual boundary between the downtown and the County will be more clearly defined, whereas now the downtown and the County areas merge visually and Pine Street does not function as a distinct boundary. The presence of the proposed structure, similar in scale and mass to the other County buildings, will emphasize the contrast with the small scale, varied buildings of the downtown.

4. South

From this viewshed area, the building will function as a visual background whereas now no background exists because of the level topography and dense homeowner landscaping. The character of the neighborhood will change with the presence of a massive building, much as if a wall were erected between this area and the center of Martinez. Because of the area's low inherent vulnerability as a result of the low population and restricted views, even though the building will create a change in character, the visual impacts are moderate.

e. Impact on Views from Approaching Routes

The Pine Street approach to the site will receive the greatest impact from the project. Pine Street now serves as a main approach to the Civic Center, and provides a sequential effect by approaching the terminus of the Administration Building and the Civic Center in a straight line. The proposed Pine Street diversion will alter this approach. A view of the south wall of the four-story Detention Facility will replace the present long-

distance view of the City Center, and will disrupt the sequential effect of the approach.

The Green Street approach to the site will terminate at the court annex. The East Hillside will be only partially visible above it; the oil storage tanks, however, will be clearly visible. The project will serve as a visual barrier to views which now link the Downtown, East Hillside and Civic Center areas.

The Court Street approach will be significantly altered. Traffic which now enters via Pine Street will be directed to Court Street. Views on Court Street from Mellus Street to Green Street in an east-northeastward direction will be entirely blocked by the Detention Facility. Views will be channeled northward the length of Court Street, emphasizing the division between the Civic Center site and the downtown.

2. Existing Land Use and the Surrounding Area

The proposed Detention Facility site will be located in an area that already has, both within it and surrounding it, existing development. The Detention Facility building itself will occupy the southwestern portion of the six block area bounded by Ward, Court, Mellus, and Willow Streets; the U. S. Post Office Building will remain in its present location at the east intersection of Court and Green Streets; and the remainder of the six block Detention Facility site will consist of paved parking areas extending from Mellus Street to Ward Street, bounded on the east by Willow Street.

The proposed Detention Facility and parking lots will, consequently, alter the existing land uses within the Civic Center and the existing interfaces between the Civic Center and the surrounding land uses. Both the Civic Center and the surrounding areas will be subject to: 1) the intensification of government use within the Civic Center; 2) changes in the visual characteristics of the Civic Center; 3) moderate changes in activities; and 4) changes in traffic flow and noise concentration. These alterations will impact on land uses both within the Civic Center and in the surrounding land use survey area especially those land uses fronting the Detention Facility site.

a. Impacts on Civic Center

The Detention Facility site represents the completion of the County's intent, known for over a decade, to use and develop this property. For over the past 10 years, this portion of the Civic Center area has been in transition, with land uses, such as parking lots, and residential or office buildings, having only temporary status. The completion of the Detention Facility and the permanent parking areas will stabilize land uses in that the area will be committed to, and utilized for, a specifically

known governmental use; it will also enable the County to make improvements in the area such as permanent landscaping to improve the general appearance of the Civic Center.

At present the County does not own four of the parcels. The two medical offices, the multiple family residence on the corner of Mellus and Willow Streets, and the vacant parcel on the south side of Thompson Street at Court Street. The County is in the process of acquiring these properties at the present time. The razing of these land uses will also require their relocation.

With the completion of the proposed Detention Facility project, the County will have developed virtually the entire land area within the Civic Center boundaries. Inasmuch as the present Main Jail and temporary parking lots were already located in the Civic Center, the proposed Detention Facility and permanent parking lots themselves do not represent new land uses. The Detention Facility building does, however, represent a much larger, more intensive use for detention purposes in that it is roughly twice the dimensions of the present Main Jail and will cover approximately ten times the ground area. The Detention Facility building and the paved parking area will also establish a new and different appearance for the overall Civic Center. In sharp contrast to the Administration Building at the northern boundary of the Civic Center, the Detention Facility building will be a low, massive 4 story structure (about 40 feet in height). The size and style of the Detention Facility building will also be significantly different than the other buildings within the Civic Center, namely the Finance Building, the U. S. Post Office, and the Court House, which front Court Street and are of 1901 and 1930's architectural design, respectively.

The Detention Facility building will cover land areas which are now portions of Pine, Green and Thompson Streets. This location will have impacts both on the general appearance of the Civic Center and the traffic routes and noise concentrations related to the Civic Center.

The buildings in the area will be subjected to increased noise due to construction activities. Following the construction of the Pine Street Diversion, Court Street will be the permanent traffic route to both the Civic Center and the CBD. Consequently, the buildings fronting Court Street will be permanently subjected to increased traffic and the related noise (Traffic and Parking, and Noise sections of this report).

During the construction period temporary parking lots will be shifted from one section to another within the six block area. Generally, throughout the entire construction phase traffic, traffic noise, road repair and construction noise, and building

construction noise will all be present in the area. As a result, the land uses in this area will be exposed to varying degrees of noise and inconvenience.

Once the Pine Street Diversion is complete, permanent traffic routes will become established, these will, logically, be in the direction of the CBD using Court Street and in the direction of the Civic Center parking lot entrances/exits. The Civic Center parking lot entrances/exits will be located as follows: two on Ward Street and 1 on Mellus Street. The access route to the Ward Street parking lot entrances/exits will be Court Street; the Mellus Street parking lot entrance/exit is located $\frac{1}{2}$ block east of Mellus and Pine Streets. Consequently, the land uses on Court Street, and at the corner of Pine and Mellus Streets will be exposed to this traffic and related noise. This traffic does not represent a new condition for land uses within the Civic Center; but the location of the parking lots on the eastern side of the Detention Facility site and the Detention Facility building on the southwestern portion of the site, may increase traffic impacts for the land uses located there.

b. Impacts on Land Use Survey Area.

The Detention Facility site will alter, in varying degrees, the potential for changes in the land use survey area and the relationships now existing in each interface. These impacts will be examined on a geographic basis for the areas surrounding the Civic Center with particular attention given, within each geographic region, to the land uses fronting the Detention Facility site.

1. Impacts on Land Use North of Civic Center

Due to the fact that no changes in existing land uses will be made north of Ward Street, little impact should result on the area north of the Civic Center boundary, Marina Vista. Visibility of the Detention Facility site will be largely obstructed by the existing County buildings, namely the Administration Building - North Wing and the Administration Building.

2. Impacts on Land Use West of Civic Center

The Detention Facility may have a significant potential impact on land uses to the west, especially on those fronting Court Street. North of Ward Street little change should occur in traffic patterns since Main and Escobar Streets already receive traffic and since no changes will occur within the Civic Center area north of Ward Street.

South of Ward Street, on Court Street, increases in traffic will result from the closure of Pine Street and the location of park-

ing lot entrances/exists on Ward Street east of Court Street.

The west side of Court Street, north of Green Street, is comprised of office uses. Between Mellus and Green Streets (the area of greatest impact) are a mixture of offices, single-family and multiple family residential uses. Also located in this area, but not fronting Court Street, are a single family residence, two multiple family residences, an office and a parking lot. The proximity of the new Civic Center development may increase the desirability of land on the west side of Court Street for offices or businesses, and decrease its desirability of continued residential use.

3. Impacts on Land Use South of Civic Center

The area to the south of Mellus Street is a mixture of single and multiple family residences and various non-residential land uses including the County Employees' Credit Union and law offices. The primary impact of the Detention Facility site will be on land uses fronting Mellus Street. The area fronting Mellus, to the east of Pine Street, will front the parking lot area and entrances/exists of the Detention Facility site. These land uses include the Credit Union at the corner of Pine and Mellus Streets, single family residences, and a church at the corner of Mellus and Willow Streets. These structures had previously been buffered by existing buildings on the blocks between Mellus and Thompson Streets. This will no longer be the case, and these structures will be directly exposed to both more traffic resulting from the diversion and the new land uses within the Detention Facility site. The result of this new interface will be increased visibility of the entire Civic Center, increased traffic and noise levels, and increased proximity to Civic Center buildings and parked cars.

4. Impacts on Land Use East of Civic Center

The land uses to the east, fronting Willow Street, will not be exposed to increased traffic due to the fact that Green and Thompson Streets will be closed and no parking lot entrances/exists will be located on Willow Street. The removal of residential structures from the Detention Facility site will, however, directly expose the land uses on the east to the Detention Facility site; in fact, since the residences are constructed on the hillside, they will have clear visibility of the entire Civic Center area. The closure of Green and Thompson Streets, between Court and Willow Streets, will reduce access to the residences fronting Willow Street. This could be somewhat offset, however, if Willow Street is extended to Ward Street, which would permit access from both Ward and Mellus Streets. This would also have the effect of increasing traffic volumes on Willow

Street. If Willow Street is left as a cul-de-sac, the traffic would be reduced, but access will be limited to Mellus, Henrietta, and Susana Streets.

Since the land development by the County in the area will be more certain, the impact should stabilize this residential area for continued residential use. The overall improved appearance in the Civic Center area should also present a more desirable appearance increasing the feasibility for continued residential land uses in this area overlooking the Civic Center.

3. Utilities and Community Facilities

a. Sewerage

1. The proposed Detention Facility will generate approximately 60,000 gallons per day (gpd) of wastewater into the public sewer system. This figure is based on an estimated total water consumption of 70,000 gpd, where approximately 10,000 gpd would be used for landscape irrigation and would not enter the sewer system.
2. The anticipated design flows will require installation of a 10" diameter connection line between the Facility and a new 12" public sewer line to be installed.
3. Monthly sewer service charges from the Detention Facility would be approximately \$3,220. This figure is based on the estimated wastewater generation of 60,000 gpd and CCCSD charge of \$1.34/100 cu. ft., or \$1.34/750 gallons generated per month. CCCSD service charges are based on the amount of water consumed (as metered by the Martinez Water System) minus an estimated amount used for landscape irrigation.
4. Street closures for the Facility (Green, Thompson, Pine) and the removal of residential buildings remaining on the site will require modification of the local sewer collection system along Willow Street and relocation of the trunk lines beneath Pine Street to Court Street. The Turner Construction Company (project construction manager) has estimated that the sewer modifications and relocations will cost \$65,000.
5. All existing sewer lines within the Detention Facility site will be abandoned. These include those lines on Pine Street between Mellus and Ward Streets, and those on Green and Thompson Streets between Willow and Court Streets. Modification of the existing Willow Street line would direct most sewage flow towards the Mellus line which will remain in service. The existing Willow Street line drains into Ward, Green Thompson, and Mellus Streets lines.

b. Water Service

1. The estimated water supply demand of the proposed Detention Facility is 70,000 gpd with a peak hour demand of 600 gpm. Landscape irrigation will require approximately 10,000 gpd of the total demand. In 1975, the average daily water consumption of the existing jail was 11,100 gpd at a cost of approximately \$7.00 per day. Based on these figures and the estimated 70,000 gpd demand, water service to the proposed Facility will cost approximately \$44.50 per day, or \$1,340 per month.
2. All existing water lines within the Detention Facility site (Green, Thompson and Pine Streets) will be removed and/or abandoned during construction of the proposed Facility.
3. A new 12" transmission main will be installed beneath the Pine Street diversion from Mellus Street to Main Street to replace the existing Pine Street main. A new 6" distribution line will also be installed on the northerly end of Willow Street. The cost of this work has been estimated at \$60,000.
4. The future of the Contra Costa County Water District (CCCWD) 18" main beneath Pine Street which serves Port Costa is uncertain. Negotiations are currently underway between CCCWD and the City of Martinez, regarding the abandonment of that main, and the transfer of Port Costa service to the City Water System. The City has stated that service by the City to Port Costa would be adequate. If this arrangement is made, the existing main on Pine Street will be abandoned and Port Costa service will be continued via the relocated Martinez main discussed in Impact #3. If not, the CCCWD 18" main will be relocated on the Pine Street diversion as well and reconnected to the existing line at Escobar Street. If the Port Costa main is abandoned and the City of Martinez provides water to Port Costa, they will be receiving water treated by the City of Martinez and not Contra Costa Water District treated water (the treatment plant for CCCWD is located in Concord).
5. Other than the \$60,000 estimated for work done as discussed in Impact #3, the cost of water line relocations is uncertain at present, and will particularly depend on the outcome of the negotiations between Martinez and CCCWD. Discussions are currently underway to determine the proportionate funding of the relocation work among the agencies involved (County, Martinez, CCCWD).
6. Unless the current drought continues for a number of years, decreasing water quality is not likely to significantly affect the health of inmates. Most persons who are sensitive to sodium, or who suffer other problems listed on in the "Health Effects Guideline" Table 8, are either quite old or very young. (Gerow, County Health Department). Since nearly all existing

inmates are within the 18 - 50 age range, the number having such health problems is likely to be small. It should be recognized that the salt content of Contra Costa Canal water is expected to worsen (estimates of up to 400 ppm have been suggested).

7. Poor water quality may have other adverse effects, however. Salty water may deteriorate the health of plants used in landscaping. Also, the taste of water becomes increasingly noticeable (poor) as the concentration of salts and other minerals increase. Inmates and staff may strongly object to drinking bad-tasting water, whether they are told it is not harmful or not. The cost of supplying bottled drinking water as an alternate supply would be quite high.

c. Gas and Electricity

1. General estimates of electricity usage within the proposed Facility include: 1) the use of 6,581,425 KWH per year. This is roughly equivalent to 22,508 therms; 2) an annual cost, at current rates, of \$131,630 (\$10,970/month).
2. The use of natural gas as a major energy source is uncertain. A recent ruling by the California Public Utilities Commission, which limits the maximum amount of gas any building may consume to 50,000 cubic feet per day (approximately 516 therms), in addition to expectations of future price increases and gas shortages, may curtail the use of this efficient fuel.

If natural gas is used for space heating as well as for cooking and laundry needs, it has been estimated that the Facility may consume 119,055 therms per year (assuming the use of solar water heating and heat recovery measures). The annual cost for heating with gas has been estimated. Based on current rates, this cost would be \$19,050 per year.

3. The alternative use of fuel oil for heating purposes would be more expensive (at current rates), less efficient, and probably create more air pollution than natural gas. If fuel oil is used for space and water heating without the inclusion of solar and heat-reclaim measures, the annual oil usage has been estimated at 131,335 gallons, or roughly 190,414 therms. The annual cost of this use at current rates and without energy conservation measures has been estimated at \$49,890.
4. The use of fuel oil as a major energy source may require a permit from the Bay Area Air Pollution Control District (BAAAPCD). A permit is required if the use is classified as industrial, or, if a non-industrial use exceeds 10 million BTU per hour (Golwin, BAAAPCD). The Detention Facility has neither been classified as industrial nor non-industrial.

Fuel oil usage estimations for January (Table 35) can be calculated as an average of over 3 million BTU per hour. As these estimations are very rough, the possibility that an hour's consumption exceeds 10 million BTU exists.

5. A fuel oil energy source for heating would require the installation of two underground oil storage tanks of approximately 12,500 gallons capacity each to provide sufficient storage for at least 2 weeks. This would also be necessary if fuel oil is used as a back-up energy source to natural gas. The existence of these tanks would create a public safety hazard that is not associated with natural gas (the supply to broken gas lines can be shut off a relatively short distance from the break).
6. Existing electricity lines will be removed from the project site. Service to existing customers east and south of the site will be relocated to an overhead line on Susana Street until the Mellus Street line can be undergrounded. This impact will not be significant, as local service should not be interrupted.
7. Existing gas lines within the project site will be abandoned. This impact is insignificant, as existing local service will not be disrupted. Local consumers which surround the site will receive service from the existing surrounding gas line network. The 6" line on Pine Street will be diverted to an existing 2" line on Court Street by means of a new 3" line to be located under the proposed Pine Street diversion.
8. State and Federal regulations (e.g., Title 24 of the State Administrative Code) may limit certain energy conservation measures, as they mandate certain minimum design features. Title 24 regulates such features as amounts of wattage for lighting per square foot and the amount of air circulation within rooms, as well as many other construction factors.

d. Telephone Service

1. Existing overhead telephone lines within the project site will be removed. These include lines on Green and Thompson Streets between Willow and Court Streets and on Pine Street south of Green Street.
2. Overhead lines on Mellus Street, south of the site, will be removed. The service will be relocated to existing overhead lines on Susana Street to facilitate continuing residential needs until an underground line can be installed under Mellus in the last stages of construction. Overhead lines on Court and Willow Streets will be removed and new lines will be

Table 35
ESTIMATED ENERGY SOURCE USAGES

Annual Estimated Fuel Oil Usage for Heating and Electrical Usage
(Assuming Natural Gas Used Only for Kitchen and Laundry; No solar
or Heat-Reclaim Systems)

<u>Month</u>	<u>Gallons Oil</u>	<u>KWH Electrical</u>
January	17,050	498,280
February	14,350	450,000
March	13,340	533,965
April	11,275	517,975
May	9,690	569,750
June	7,820	553,660
July	6,990	587,645
August	6,935	623,330
September	6,830	607,235
October	8,575	587,645
November	12,440	553,660
December	16,040	498,280
	<u>131,335</u>	<u>6,581,425</u>

Estimated annual costs = \$49,890 for oil; \$131,630 for electricity.

Annual Estimated Natural Gas Usage for Heating and Electrical Usage
(Assuming No Fuel Oil Usage for Heating; Inclusion of Solar and Heat-
Reclaim Systems)

<u>Month</u>	<u>Therms Gas</u>	<u>KWH Electrical</u>
January	15,430	498,280
February	13,000	450,000
March	12,100	533,965
April	10,230	517,975
May	8,790	569,750
June	7,060	553,660
July	6,360	587,645
August	6,290	623,330
September	6,200	607,325
October	7,780	587,645
November	11,265	553,660
December	14,550	498,280
	<u>119,055</u>	<u>6,581,425</u>

Estimated annual costs = \$19,050 for gas; \$131,630 for electricity.

Source: Donald Bentley and Associates Consulting Engineers, Nov. 15, 1976.

placed underground. The existing overhead line on the east end of Ward Street will also be relocated underground.

3. Grading on the Detention Facility site may necessitate removal of the Pine Street underground conduit, as the cable is buried only 30 inches deep. A new conduit would be installed at a new level after final grading.
4. Telephone service to the existing facility costs approximately \$230 per month. Irene Bartlett of the Department of Public Works has estimated that service to the proposed Facility will average \$15 per month per phone or \$2250 per month for 150 phones.

e. **Cable TV-Radio**

1. The cost of cable television and radio service would be relatively insignificant. Televents, Inc. currently charges \$6.00 per month for a first outlet to any one customer, \$2.50 per month for each additional television outlet, and \$1.00 per month for each radio receiving cable service. The County estimates a maximum of 50 installed televisions. Although unlikely, a maximum of 50 radio connections might also be assumed. At current rates, the monthly charge for cable television and radio service will not exceed \$117.50.
2. Installation and use of a new underground feeder line to serve the Facility will tap existing signal strength that currently serves residences east and south of the project site. However, existing capacity is great enough so that existing service would not be adversely affected.
3. The use of cable service is a positive impact in that the use of an unsightly antenna is avoided, and the quality of service (i.e., signal strength) is high.
4. A disruption of power from within the Detention Facility would not affect existing residential service.

f. **Fire Protection**

No significant impacts relating to fire protection service are known or foreseen. Hydrant and fire alarm installation or relocations will be coordinated with other construction and will create no impacts.

g. **Solid Waste**

1. The existing facility generates approximately 3 yards of waste per day from 200 to 215 persons (staff and inmates). The proposed Detention Facility is expected to contain approximately

525 persons at full capacity. Based on those figures, the Detention Facility could be expected to generate approximately 7.5 yards per day, if an on site waste recovery program is not implemented.

2. Service costs would not be a significant impact:
 - a. If the current type of service is extended to the new Facility, the most inexpensive monthly service charge would be approximately \$420. This is based on the use of one 20 yard container which would be collected 3 times per week (Bissio).
 - b. An alternate choice would be the use of a compactor machine. The initial installed cost of a 26 cubic yard waste compactor, supplied by Martinez Sanitary Service, would be approximately \$12,500 with a monthly operating expenditure of \$15 to \$20. The machine could compact a week's waste, requiring only one collection per week. The monthly service charge would be approximately \$350. Based on these costs it might take as much as 20 years before a savings would be realized. Both of these methods would require the use of a non-route system (the truck would make a single stop at the Facility and go directly to ACME Fill).
3. Early morning noise from the collection trucks would affect more outside persons at the new Facility, as it is closer to residential areas than is the existing facility. However, if wastes are collected fewer times per week, i.e., once, the impact would be minimal.
4. A waste recovery program for the Facility (see Mitigation Measures section) would require some space for recycled materials storage within the jail and minor costs for transferring the materials to a recycling center.

h. Utility Relocations/Abandonments

1. Relocations or removal of existing utility services will create intermittent traffic problems and are likely to generate a significant amount of noise.
2. It has been estimated that off-stie utility relocation will cost approximately \$200,000. Some of the work not included in this estimate will be funded by P.G.&E.'s "Rule 20" monies. Rule 20 monies will cover most costs incurred from undergrounding existing overhead utilities within the utility district to be formed. These include electricity, telephone, cable T.V. and radio, and the fire alarm system.
3. Utility relocations may cause brief interruptions of services to existing customers. This impact is unlikely as precautions will be taken to avoid such interruptions.

i. Estimated Utility Service Costs

The following is a tabulation of estimated monthly and annual service costs for utilities serving the proposed County Detention Facility. It should be emphasized that all figures are based on estimated amounts of utility usage at current service charges. Some figures, particularly for natural gas and oil usage, are less accurate estimates, as the usage cannot yet be accurately determined due to the immature state of building design, and service costs are expected to markedly increase in the next few years. Specific utility discussions should be consulted to determine the relative accuracy of each estimation.

ESTIMATED UTILITY SERVICE COSTS

<u>Utility</u>	<u>Monthly</u>	<u>Annual</u>
Sewer	\$3220	\$38,640
Water (Bottled Water) ¹	1340 (2000)	16,080 (24,000)
Natural gas ² (Fuel Oil) ¹	1590 (4160)	19,050 (49,890)
Electricity	10,970	131,630
Telephone	2250	27,000
Television and radio	175	21,000
Fire protection ³	-	-
Solid waste disposal	<u>370</u>	<u>4,440</u>
TOTAL	\$19,915/month	\$238,940/year

¹The estimates for bottled water and fuel oil are not included in the totals.

²Natural gas estimates cover only the use of gas for heating. Other uses (laundry, kitchen) have not been estimated.

³No service charge for fire protection due to the fact that the County is not a taxpayer.

4. Circulation and Parking

This section of the report addresses impacts of the anticipated circulation system, traffic and parking conditions in the year 1980. It considers the base situation (No Project alternative) and the effect of the various project alternates with particular emphasis on Alternative E, the proposed project.

For complete descriptions of Alternates A-D, the project alternatives which are no longer being considered, see the Project Alternatives section of this report and Background Report, Chapter 6.

a. Circulation and Access Systems

Impacts on the circulation and access systems are related to the amount of street closure or rerouting contained in project alternates. This ranges from very little for Alternates A and B to very substantial for Alternates D and E. The majority of impacts occur within the Civic Center; access and circulation to adjacent areas is less impacted. Those areas outside the Civic Center with the greatest change are Willow Street between Mellus and Green Streets and the residential area bounded by Green, Court, Las Juntas, and Henrietta Streets. Persons residing in this area may have to alter their access patterns by up to two blocks, due to the culs-de-sac that will be created by the proposed project.

Within the Civic Center the major shift is diverting Pine Street to Court Street, with Court Street becoming the major through and external access facility, under Alternates D and E. The remaining portion of Pine Street south of Escobar Street serves local circulation and parking lot access. In effect, the major access route is to the west of, rather than in the middle of, the building complex.

b. Traffic volumes

1. There is no difference between alternates with respect to their traffic generation. Daily trip generation increase is 430 trip ends, P.M. peak hour is 90 trip ends. This amounts to approximately 1% of the estimated 1980 daily traffic volume on the major arterials accessing central Martinez. The peak hour volume comprises around 2% of the estimated peak hour arterial traffic. In terms of both relative value and absolute traffic, these are very small changes and do not have any significant effect on the major streets. Table 36 summarizes estimated trip generation of the detention functions and court elements of the proposed Detention Facility. Figures 55 through 58 show daily and peak hour traffic volumes for the 1980 no-project condition and for the proposed project on the major arterials.

2. Within the Civic Center area the changes in traffic volumes induced by the street closures and reroutings and the relocation of parking facilities are of greater impact than the increment in traffic demand generated by the Facility. Peak period critical intersection volumes are up to 20% greater under some Alternates compared to the 1980 base condition (no project). This increase is still well below the capacity of the affected locations. Figures 59 through 62 show daily and peak hour traffic volumes for the 1980 no-project condition and for the proposed project within the Civic Center.

3. During the height of construction the Detention Facility will generate 420 daily trips (including trucks) with a commute

Table 36

DETENTION FACILITY WEEKDAY
TRIP GENERATION SUMMARY

<u>Element</u>	<u>Persons</u>	<u>Person Trips</u>	<u>Occupancy Factor</u>	<u>Auto Trips</u>
Detention Center				
Day Staff	44	88	1.2	73
Swing Staff	28	56	1.2	47
Night Staff	14	28	1.2	23
Total Staff (typical weekday)	86	172	1.2	143
Transportation Staff (day only)	22	44	1.2	37
Subtotal				180
Official Visitors	50	100	1.1	90 (50)
Unofficial Visitors	90	180	1.1	160
Subtotal				250 (210)
TOTAL				430 (390)
() with locality adjustment				
Municipal Court				
Judge & Staff	10	20	1.0	20
Persons in Court*	80	160	1.1	150
Subtotal				170
Superior Court				
Judge & Staff	5	10	1.0	10
Persons in Court*	30	60	1.1	50
Subtotal				60
* excludes Public Defender, District Attorney, Detainees				
<u>Incremental Increase</u>				
Daily Traffic Generation				
Detention Center				200
Courts				230
TOTAL				430
P.M. Peak Hour				
Detention Center				60
Courts				30
TOTAL				90

Sources: Detention Facility Service Program Report, chaps. VII & VIII, November 1976.

Draft Environmental Impact Report, Criminal Justice Detention Facility, Appendix B, January 1975.

JHK & Associates



Figure 56

1980 NO PROJECT DAILY VOLUMES

LOCAL

jhk & associates

1-14-77

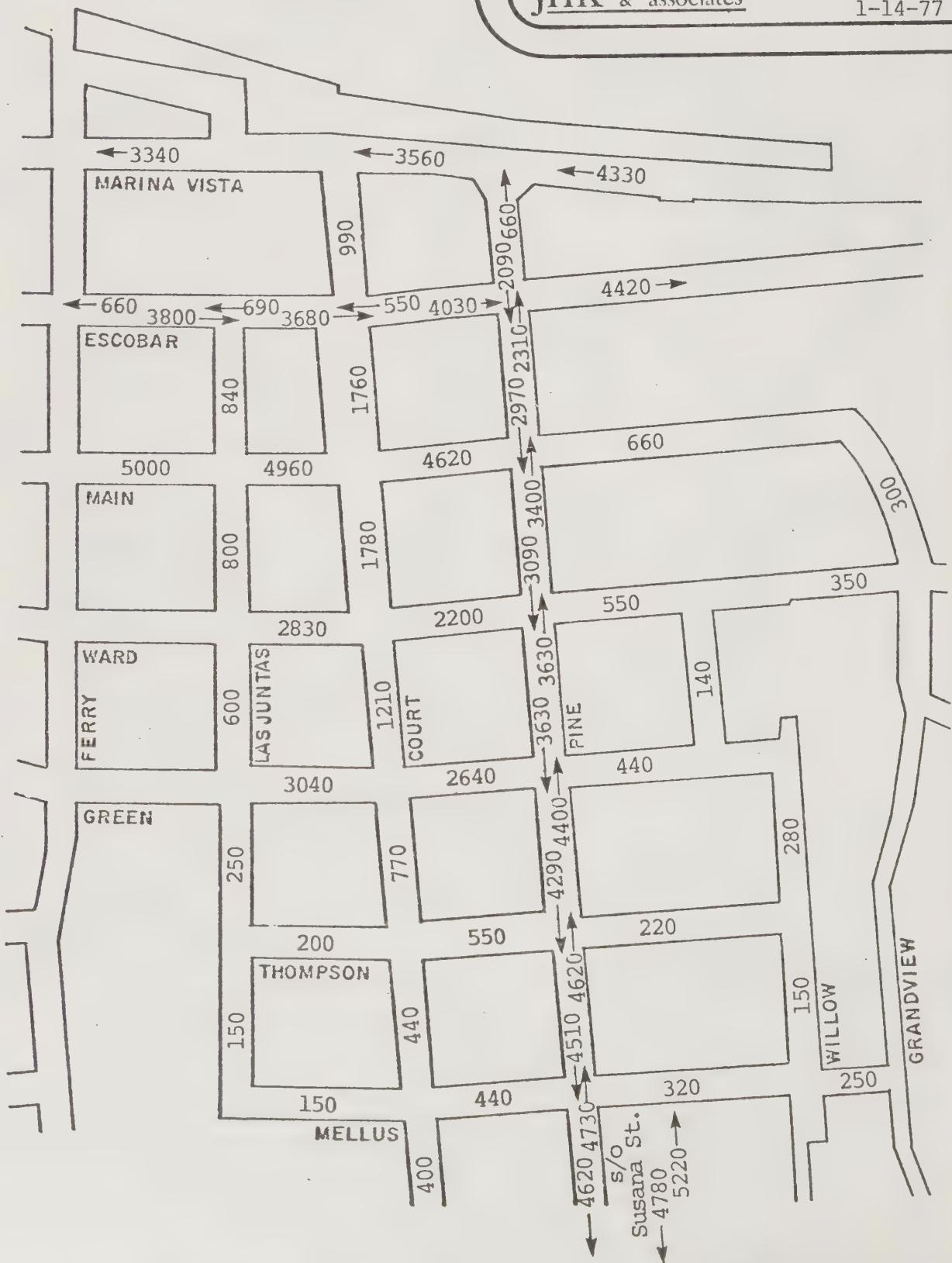




Figure 58

1980 NO PROJECT P.M. PEAK VOLUMES
LOCAL

jhk & associates

1-14-77

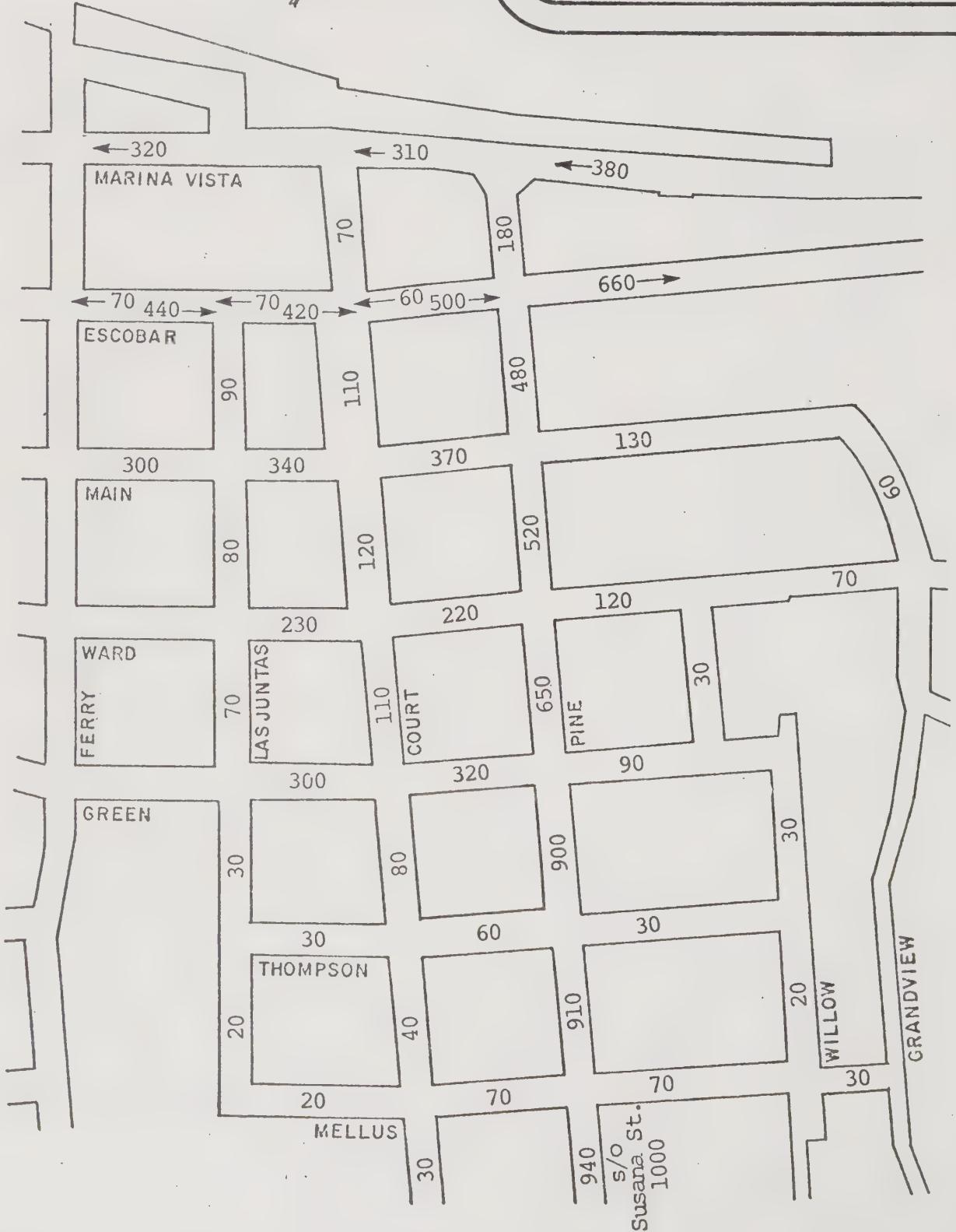
0 100 200
APPROXIMATE SCALE
IN FEET



Figure 60

1980 ALTERNATE E DAILY VOLUME
LOCAL

jhk & associates

1-14-77



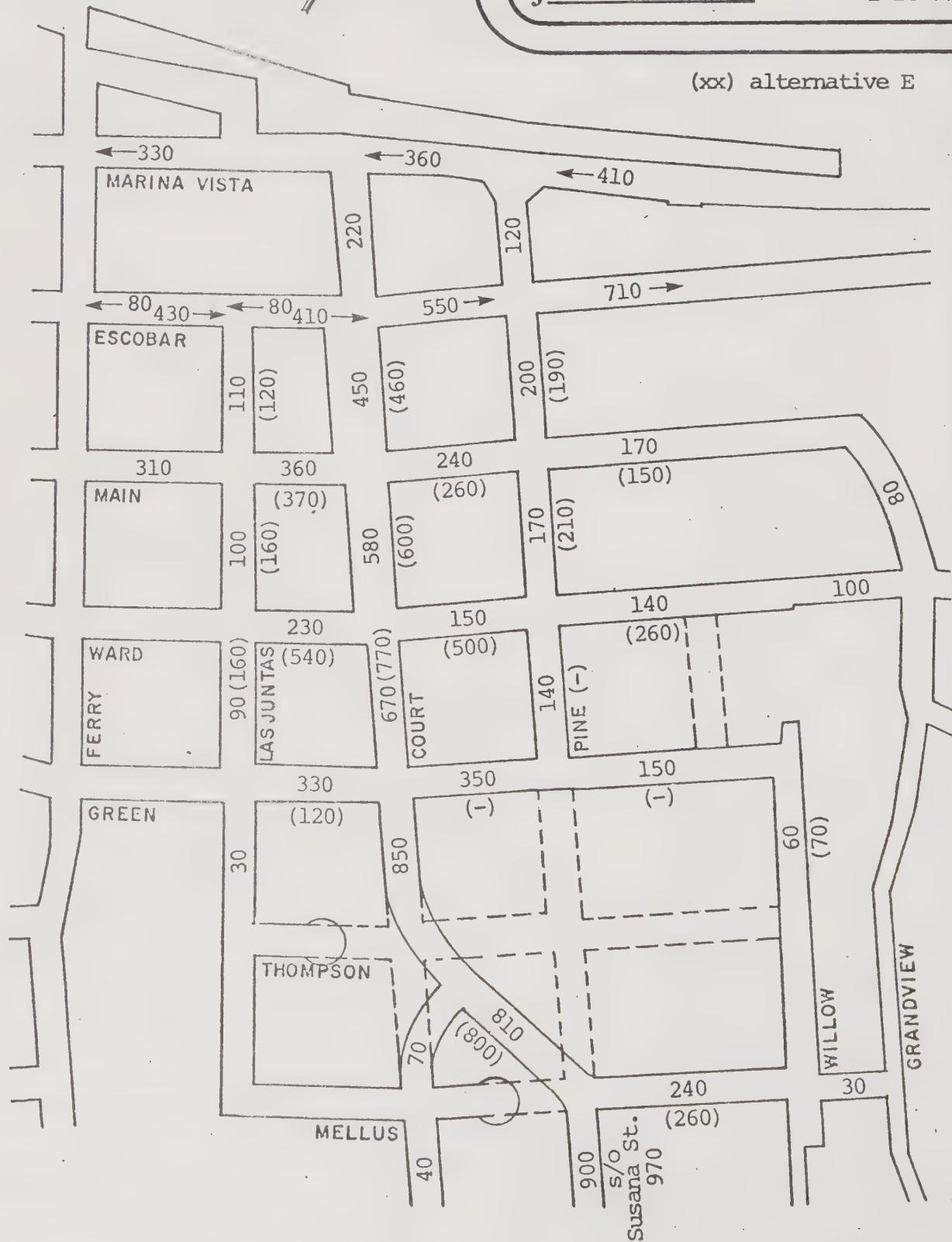


Figure 62

1980 ALTERNATES
D&E P.M. PEAK VOLUME

jhk & associates

1-14-77



period peak of 150 vehicles. Total truck volume during the heavy haul period will be 90 trips per day, spread evenly over the working period. Peak period traffic will coincide with the Civic Center peak as the proposed work day is 8:00 a.m. to 4:30 p.m. The construction peak will occur in late 1977, however, and base traffic will be 6% to 8% lower than in 1980. Therefore, total peak hour traffic will be less than 1980 without the project.

c. Vehicle Miles of Travel (VMT)

Vehicle miles of travel within the defined impact area (generally older Martinez) does not vary significantly between project alternates. The Facility itself will generate an additional 550 VMT daily. VMT increase due to changes in the Civic Center circulation system is around 200. Rounding to the nearest significant digit shows a VMT increase of 1,000. Total area wide 1980 daily VMT is 117,000 plus or minus 25,000, for the base condition. With any Detention Facility alternate the total VMT is 118,000, or less than 1% over the no project case.

Within the Civic Center area there are measurable differences in VMT between Detention Facility alternates. Compared to the total the difference is small. The range of alternates is only 162 VMT from a base of over 4,200. This is still greater than the increment between the No Project base and the lowest estimate including the Detention Facility.

d. Parking

Impact of the Detention Facility on parking in the Civic Center area is substantial. This is due more to the effect of the project on potential supply than on the additional increment of parking demand generated by the Facility. Total additional Detention Facility demand is 130 spaces. All of the proposed project alternates supply enough parking to meet the incremental increase (although Alternate E just barely covers it). However, there is a present parking deficiency in the Civic Center area which will be substantially worsened by 1980. Since the project will consume all of the undeveloped area remaining in the Civic Center (as well as some presently development parking) opportunities to add more parking space to meet the base demand are seriously constrained compared to the No Project alternative. Only Alternates B and C supply enough parking to accommodate the average daily demand within the prescribed optimum limits. Alternate A has a slight shortfall.

e. Congestion and Delay

The increment of additional traffic generated by the Detention Facility will not impact traffic flow significantly. Within the Civic Center area itself, however, there will be some additional congestion generated by street closures, changes in parking access

and additional traffic control device installations. This will generally follow the same pattern of peak congestion presently observed where short term (ten minute) congestion results from the intensity of activity following the close of the normal work day at 5:00 p.m.

f. Alternative Analysis

Alternate E (the proposed project) proposes the greatest change in street patterns of the five alternates. It incorporates the east-west impacts of Alternate C with the north-south traffic effects of Alternate D. Pine Street is diverted to Court Street at Mellus Street, north of Mellus, Pine Street is abandoned to Ward Street. Green Street and Thompson Street are abandoned between Court and Willow Streets. West of the diversion, Mellus and Thompson Streets terminate in culs-de-sac.

Through trip diversion from Green to Ward Streets is less under Alternate E than C since Court Street is now the north-south through facility. Most Civic Center traffic will divert to Ward Street as it provides access to the major parking, which is east of Pine Street. The through Civic Center traffic currently on Pine Street will be on Court Street, while Pine Street will continue to provide access to the buildings and parking lots in the north and central areas of the Civic Center. Traffic circulation in and around the Civic Center will increase as the principal access shifts to the west side of the Center Area (Court Street) from the middle (Pine Street). Table 37 summarizes the relative rankings of all alternative project designs for all significant impact areas considered.

5. Plans and Policies

a. Local Policy Plans

In broad perspective, the project reaffirms the basic City of Martinez and County consensus of the 1950's to keep and expand the main County administrative center in its traditional location on the east side of Martinez business district. In its specifics, however, the project is sufficiently different from any facility previously contemplated by the County government or anticipated by the City of Martinez that its adoption will remake public policy for development in the Civic Center, and both units of government may find it desirable to amend their adopted plans accordingly.

The project has finally made the 1963 County Civic Center Master Plan obsolete as a concept for development and as a guide to be followed for subsequent projects. The Detention Facility will occupy the space proposed in 1963 for other uses. The Detention Facility project clearly has created a need for a new County Civic Center concept and plan. (This, however, has no necessary effect on project timing.)

Table 37

SUMMARY RANKING OF DETENTION FACILITY ALTERNATES

Impact Area	Alternate Rank				
	A	B	C	D	E
Circulation System	1	1	3	4	5
Traffic Volumes	2	1	3	4	5
Vehicle Miles of Travel	1	2	4	3	5
Parking Supply	3	1	2	4	5
Congestion and Delay	1	1	3	4	5

Notes: 1 - Least Impact

5 - Most Impact

Equal rankings indicate no discernable difference between alternates.

Unweighted rankings, actual differences small in some cases.

The project evidently conforms to the County General Plan. This means that the County can approve the project without first having to amend its General Plan. This has been a recognized advantage of the Civic Center location for the Detention Facility throughout the current program.

County General Plan conformance, however, is partially an outcome of the minimal contents and highly generalized policies of the County General Plan as they now pertain to the County Civic Center area. This minimum coverage simplifies project review in the present case, but it is likely to be disadvantageous to the County in the future when subsequent projects are being considered in the area. Actions on the Detention Facility project will enable the County to proceed with planning for other capital projects; some, such as a future courts building, probably will be located in the Civic Center. It will create new relationships with adjoining areas. Along with a new Civic Center Plan, the County should update its General Plan.

The Detention Facility project, if built, will also make parts of the Martinez General Plan obsolete. Specifics in the existing City General Plan that are contrary to the project include land use in the blocks between Thompson and Mellus Streets and the Pine Street diversion. Following the Detention Facility project, the City will probably face questions of Civic Center expansion in common with the County, and with land use and circulation matters affecting the area of downtown Martinez adjoining the Civic Center.

b. County Capital Improvement Plans

In the recent past, the complexity of planning and funding for the Detention Facility has hindered the County's overall capital improvements program. This problem is being reduced as plans for the Detention Facility move ahead. With this impediment removed, the County can address other capital improvement needs.

A by-product of the planning for the Detention Facility has been the identification of several other criminal justice capital needs. There is a need to construct additional courts, both Municipal and Superior. Even as progress on the Detention Facility project continues, it is understood that facility capacity may need to be enlarged within ten years to correspond to the increase in the County's inmate population.

One impact of the capital improvement planning for the Detention Facility has been an identification of the need to coordinate and combine all County capital improvement projects in a comprehensive

program contained in a published financial plan. Such a program should remain flexible to accommodate the changing nature of the County and its government.

c. Detention Facility Standards

The project should comply with the State's Minimum Jail Standards, and in all instances except one, it does. The exception is the 1,500 square feet required for the outside exercise area; but the State Board of Corrections has indicated that the use of the decentralized outside areas near each residential cluster may be acceptable.

The project also meets most advisory standards. The primary exceptions are: 1) the National Advisory Commission on Criminal Justice Standards and Goals (NAC) maximum capacity standard of 300 persons, and 2) the NAC room size standard of 80 square feet. In each instance, the National Clearinghouse for Criminal Justice, Planning and Architecture (NCCJ) representatives have indicated their acceptance of the project's proposals due to the total facility program.

6. Soils and Geology

The potential impacts on the project site are described below and summarized in Table 38.

a. Strong Ground Shaking

Moderate to strong earthquakes originating on the San Andreas, Hayward, Calaveras, Green Valley, Concord, and other regional faults have produced strong earthquake shaking and damage to structures in the Martinez area in historic time. Similar seismic events should be expected in the future. The magnitude of historical earthquakes and the projected maximum credible and maximum probable earthquakes for faults considered significant to this project, are given in Table 39.

During a strong earthquake associated with the faults shown on Table 39, the characteristics of the ground shaking will depend upon several variable factors: the magnitude and distance of the earthquake; the duration of shaking; and the characteristics of the relatively near-surface soil and rock. Experience has shown that the ground shaking to which a building is subjected depends largely on the ground response, or the reaction of the ground to the earthquake shaking. The soil conditions at the proposed site do not appear to warrant a site response study.

The proposed structure should be designed with consideration of the historic seismicity and the maximum credible and maximum probable earthquakes as shown on Table 39. As a minimum, the structure should be designed in accordance with Section 2312 of the 1976 Uniform Building Code. This Code includes an increase of the level of the design lateral forces; introduces a site-specific soils factor; considers the period of vibration of the building; considers the characteristic site period and the number of stories; and provides for an occupancy importance factor.

The Contra Costa County Seismic Safety Element indicates that structures of involuntary occupancy such as jails, should present the lowest possible risk to their occupants in the event of an earthquake. It remains for Contra Costa County to designate the level of risk that is acceptable for the facility by indicating whether the structure should remain functional after a maximum credible earthquake, a maximum probable earthquake, or some lesser magnitude event. It may be desirable for the proposed facility to remain functional following a maximum probable earthquake (Table 39) and to be sufficiently safe to give reasonable assurance of preventing injury or loss of life during, or following, a maximum probable or maximum credible earthquake.

Table 38

EXISTING CONDITIONS, POTENTIAL IMPACTS, AND MITIGATING MEASURES

CONDITION	IMPACT	MITIGATION MEASURES
Future strong regional earthquakes	Strong ground shaking imparted to structures (Similar to entire area)	Design structure to accommodate strong earthquake shaking. As a minimum the structure should be designed in accordance with Section 2312 of the Uniform Building Code.
Compressible soils at shallow depth	Possible differential settlement; amount minor for 3- to 4- story structure.	Accommodate settlement in design; plan for even distribution of footing loads.
Ground water at shallow depth	Instability of deep construction excavations; possible seepage into any facility constructed below the water table.	Construct foundations above existing ground water. If necessary to excavate below water level, employ sump pumps and cut slopes no steeper than 1 1/4:1. Floors and walls of subterranean facilities should contain impervious membranes, and should include drainage blankets and gravity drains.
Irregular bedrock surface	No impact unless building loads require pile support. Would then have uncertainties concerning pile lengths needed.	No action unless piles needed. If piles needed, install and load-test "indicator" piles at selected locations throughout the site (during construction); order pile lengths subsequent to determination of results.

Table 39

MAXIMUM CREDIBLE AND MAXIMUM PROBABLE EARTHQUAKES

Fault Relevant to Project Site	Distance from Site (mi)	Maximum Historical Earthquake	Maximum Credible Earthquake ¹	Maximum Probable Earthquake ²
Known Active				
San Andreas	30	8 1/3 (1906,1838)	8 1/2	7 1/2 to 8
Hayward	11	7 1/4 (1836,1868)	7 1/2	6 1/2 to 7
Calaveras	18	6 1/2 to 7 (1861)	7 1/2	6 1/2 to 7
Concord	3	5.4 (1955) ³	6 1/2	5 1/2 to 6
Green Valley	6	----	6 1/2 - 7	6 to 6 1/2

¹ The maximum credible earthquake is the maximum earthquake that, in our judgment, appears capable of occurring under the conditions of the presently known geologic framework. It is a rational and believable event that is in accord with present knowledge. In determining the maximum credible earthquake, there is little regard to its probability of occurrence except that its likelihood of occurrence is great enough to be of concern. The maximum probable earthquake would be less than this value.

² The maximum probable earthquake is an event that appears likely within a 100-year time period. The earthquake is regarded as a probable event and not an assured event.

³ Possibly associated with indicated fault.

NOTE: This table is not intended to provide design parameters for the structure, but to provide a summary of the seismic environment in which the site is located. During strong earthquakes associated with the faults shown above, the characteristics (parameters) of the ground motion at the proposed Detention Facility site will depend upon several variable factors: the magnitude and distance of the earthquake, the duration of shaking, and the characteristics of the near-surface soil and rock. Any design parameters should only be developed after consulting with the structural engineer and the soils engineer. However, any design of the proposed structure should consider the historical seismicity, the maximum credible, and the maximum probable earthquakes shown above; and as a minimum, should be designed in accordance with Section 2312 of the 1976 Uniform Building Code.

b. Instability of Excavations Below Shallow Ground Water Level

Ground water is present at shallow depths below much of the project site. The presence of shallow ground water represents a potential stability problem for any deep excavations such as basements, elevator shafts, or other underground facilities. Failure of such excavation might conceivably involve closely adjacent property. Excavation below the water table could also require special treatment to prevent seepage into underground structures following their completion.

c. Differential Settlement

Under a relatively thin, near-surface layer of very stiff, silty clay which is stated to be capable of providing good foundation support, wet, relatively compressible, silty soils are reported to exist (Woodward-Clyde Consultants, 1976b). Therefore, if the foundation configuration requires placement of some of the footings below the near-surface clay, some differential settlement could occur. Moreover, it appears that the compressibility of the soils may be too great to permit safe use of conventional footings if a relatively tall (higher than approximately 4-story), or excessively heavy, structure were to be erected on the site (Woodward-Lundgren, 1971).

d. Irregular Bedrock Surface

The depth to bedrock varies substantially across the site, as shown on Figure 36. Should a change in configuration, or weight, of the building require use of pile foundations, higher costs might very likely be incurred to accommodate this variation.

According to the most recent soils and siting analysis (Woodward-Clyde Consultants, 1976b), depth to bedrock is not a controlling item. That analysis assumes that the imposed loads can be accommodated by a spread footing foundation design.

e. Other Considerations

In addition to the items discussed above, the possible risk to the site from the phenomena of surface fault rupture, liquefaction, lurching, and seismically induced flooding has been considered. In our opinion, none of these phenomena are likely to occur at the site; therefore, no impact is expected and no mitigating measures are recommended.

7. Hydrology and Water Quality

a. Hydrologic Impacts

The increased runoff from the proposed Detention Facility will have a minimal impact upon the area's drainage systems.

Tudor Engineering Company, which is designing the drainage facilities for the project, estimates that a coefficient of 0.50 would approximate the existing conditions (i.e., one-half of the rainfall is absorbed). There is a mixture of uses on the project site today: parking lots, dirt lots, residences, streets and sidewalks, lawns and several offices. Applying the $C = 0.50$ to the graph reveals that the existing runoff for the 10 year storm is approximately 9 cfs, and 13 cfs for the 100 year storm (Table 40, Figure 63).

The site runoff after the facility is constructed is approximated by a $C = 0.95$ (i.e., in downtown areas, only 5% of the rainfall is absorbed). Applying this coefficient shows that a site runoff approximates 17 cfs for the 10 year storm and 25 cfs for the 100 year storm.

If the site is drained to one single facility and is designed for the 100 year storm frequency a pipe of up to 48 inches in diameter will be required to carry runoff. If, however, the site is drained to two areas, one new pipe of 30-36 inches in diameter and the existing 12 and 18 inch pipes would be required; the former northerly in Pine Street and the latter two westerly in Mellus and Green Streets. However, a 48 inch pipe in Pine Street will be much too large because the site needs only to be drained to the 10 year or at the most 25 year storm. This is because the site is high on the flood plain and has a 3-6% slope. The 100 year storm would allow water to rise a few inches up the curb and therefore a low risk is involved.

Installation of a drainage facility under Pine Street will allow 80% of the site to drain in a northerly direction. This will divert approximately one-half of the storm waters which now flow easterly into the facilities in Mellus and Green to the Pine Street facility. This will significantly reduce the potential load on the existing facilities enabling them to carry Civic Center runoff in the future.

For the above reasons a 30 to 36 inch diameter pipe will be more than sufficient to meet the needs of the Detention Facility site, the Civic Center and the hillside to the east.

One of the greatest impacts will be cost. If, for instance, the site is drained in a northerly direction, an underground system

Table 40

RATIONAL METHOD RUNOFF COEFFICIENTS (C)

The coefficients in the next three tabulations are applicable for storms of 5-year to 10-year frequencies.

Description of Area	Runoff Coefficients	Soil Type	Runoff Coefficients		
			Cultivated	Pasture	Woodlands
Business:					
Downtown areas	0.70 to 0.95	Above-average infiltration rates; usually sandy or gravelly	0.20	0.15	0.10
Neighborhood areas	0.50 to 0.70	Average infiltration rates; no clay pans; loams and similar soils	0.40	0.35	0.30
Residential:					
Single-family areas	0.35 to 0.50	Below-average infiltration rates; heavy clay soils or soils with a clay pan near the surface; shallow soils above impervious rock	0.50	0.45	0.40
Multi-units, detached	0.40 to 0.60				
Multi-units, attached	0.60 to 0.75				
Residential (lots 1/2 acre or more)	0.30 to 0.45				
Apartment dwelling areas	0.50 to 0.70				
Industrial:					
Light areas	0.50 to 0.80	Less frequent higher-intensity storms will require modification of the coefficient because infiltration and other losses have a proportionally smaller effect on runoff. NOTE: C x Cf obviously must be less than 1.0.			
Heavy areas	0.60 to 0.90				
Parks, cemeteries	0.10 to 0.25				
Playgrounds	0.20 to 0.35				
Railroad yard areas	0.20 to 0.40				
Unimproved areas	0.10 to 0.30				

It is often desirable to develop a composite runoff coefficient based on the percentage of different types of surface in the drainage area. This procedure is often applied to typical "sample" blocks as a guide to selection of reasonable values of the coefficient for an entire area.

Character of Surface	Runoff Coefficients
Streets:	
Asphaltic	0.70 to 0.95
Concrete	0.80 to 0.95
Drives and Walks	0.75 to 0.85
Roofs	0.75 to 0.95
Lawns, Sandy Soil:	
Flat, 2%	0.05 to 0.10
Average, 2 to 7%	0.10 to 0.15
Steep, 7%	0.15 to 0.20
Lawns, Heavy Soil:	
Flat, 2%	0.15 to 0.20
Average, 2 to 7%	0.20 to 0.25
Steep, 7%	0.25 to 0.35

Recurrence Interval (years)	<u>C_f</u>
2 to 10	1.0
25	1.1
50	1.2
100	1.25

References:
 Handbook of Applied Hydrology
 V. T. Chow, Editor McGraw Hill, N.Y. 1964

Sewer Design and Construction
 ASCE Manual No. 37 ASCE, N.Y. 1960

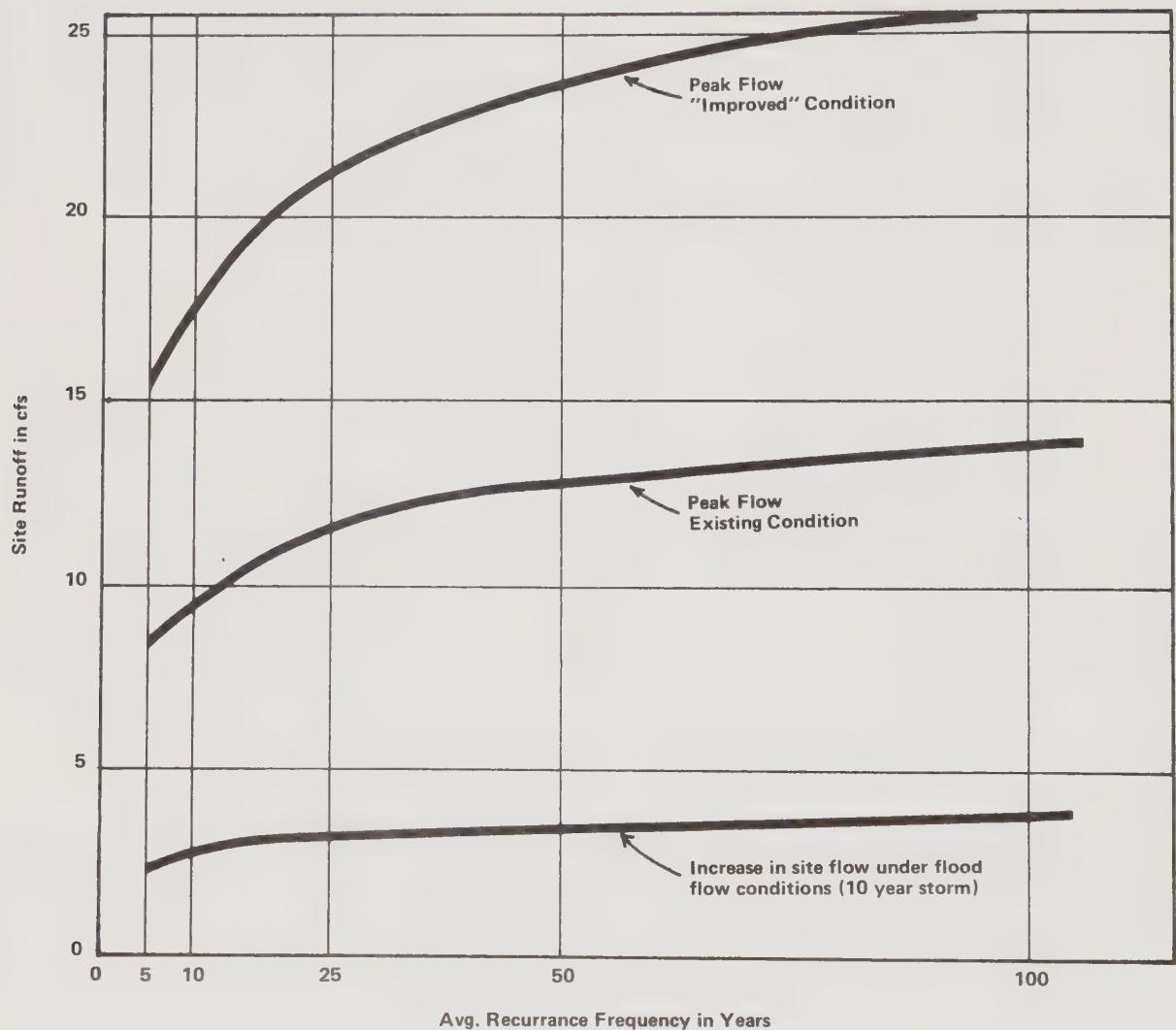
Drainage Criteria Manual, Vol. 1
 Denver Regional Council of Govt.
 Denver, Colo. 1969

CONTRA COSTA COUNTY
 FLOOD CONTROL and
 WATER CONSERVATION DISTRICT

Runoff Coefficients
 for
 Rational Method

DESIGNED	CHECKED	LH	SCALE
DRAWN B.B.	DATE	8-75	PLD. BY
APPROVED	U.S. No.	DRNG.	NO.
			A-85

Figure 63
Runoff Calculations (Tudor Engineering Co.,
Dec., 1976)



Note: Flows have been computed using the "Rational Formula"
Hydrology Stds. of Contra Costa County, See drawings A-85.
($T_c=10\text{min.}$, (C) existing=.50, (C) improved=.95)

must be constructed in Pine Street in front of the County Administration Building to the existing drainage channel immediately to the north of the Southern Pacific railroad tracks. To accomplish this alternative a great deal of grading would be required. The other, least costly alternative would be to drain the site in a westerly direction into Alhambra Creek. Since facilities exist in this direction they would only need to be increased in size (larger pipe installed).

The estimated cost of \$50/lineal foot would mean that the total cost of placing a subsurface line of up to 36 inches in diameter will be in excess (with catch basins, etc.) of \$100,000.

The Pine Street alternative will contribute to the capacity of the pipe under the railroad and the open ditch flowing north-erly to the bay. The Mellus and/or Green Street alternative will contribute to the capacity of Alhambra Creek. It is likely that both systems will be required to adequately drain the site. The Mellus and Green Streets facilities exist and the Pine Street facilities will be constructed if the project is approved. It will take approximately 6-8 weeks to install such facilities.

b. Water Quality Impacts

Construction of the proposed Detention Facility will affect water quality in the receiving body of water, the Carquinez Strait, both during construction and in the subsequent operation and maintenance activities associated with the facility.

i. Construction Related Impacts

During construction activities, higher than ambient suspended solids loadings can be expected due to grading, excavation and other sediment producing activities if rain washes sediments into receiving waters. Vehicular related heavy metal pollutants, grease and oil will be generated during construction. Standing water that has accumulated in excavated areas due to precipitation or seepage, will contain quite high levels of suspended solids when such water is pumped out and it will be a source of single event pollution to receiving waters. The problem of suspended solids is tied ultimately to other water quality parameters. High sediment loads increase the probability of transporting pesticides, nutrients, and various organic pollutants, by acting as a mobile substrate upon which they absorb, or otherwise adhere (Background Report, Chapter 12).

ii. Land Use Impacts

The proposal envisions construction of the Detention Facility on approximately 10,000 square meters (2.5 acres) of existing

parking lot surfaces. As discussed, the existing surfaces are largely asphalt with approximately 10% graded soil. The net hydrological impacts from a land use perspective, will involve the slight modification in the velocity and volume of storm water runoff that accompanies project development.

The water quality impacts of the facility, from a land use perspective, are related primarily to the loss of existing parking lot surfaces in the project area. In terms of water quality, streets and parking lots generate the greatest amount of heavy metal toxicants, while biochemical oxygen demand (BOD) and total solids loading rates have been found, (Sartor and Boyd, 1976) to be higher in areas associated with residential development. Additionally, possible biostimulatory substances and pesticides would be more common in unpaved lots or landscaped areas.

The reduction of parking lot surfaces will result in reduced loadings of grease, oil and trace metals in the immediate area. The number of lost parking places, however, can be assumed to be offset by new parking facilities that will be added in other portions of the Civic Center, some of which will be constructed on the project site. Thus no net or incremental water quality impacts upon receiving waters are expected for these constituents. Landscaping around the proposed facility will add organic material that generates a biochemical oxygen demand to receiving waters, as well as small quantities of nutrients, suspended solids and possible herbicides. The receiving waters, the Carquinez Straits, are most sensitive to nutrients, trace metals, and herbicides or pesticides. Amounts of these constituents will be approximately equal to existing levels with an expected slight increase in BOD and nutrients due to landscaping around the facility.

iii. Operation and Maintenance Related Impacts

During normal maintenance of facility grounds, landscaped areas may contribute nitrogen and phosphorus biostimulants if they are fertilized. Loading of BOD may occur due to organic material from the same areas. Cleaning operations associated with vehicles or equipment may generate surfactant (detergent) pollutants. The actual amount of pollutants found along curb gutters would depend on the frequency of street sweeping and cleaning operations. The proposed project will not significantly increase water pollution in the local area or receiving waters.

8. Vegetation and Wildlife Impacts

Most of the plants existing within the site are exotic, are commonly planted in surrounding areas, and are easily grown. Wildlife is limited due to unnatural conditions, and, like the vegetation, is dominated by exotic species. Specific impacts have been identified and are discussed below.

a. Removal of Significant Trees

The largest, and therefore probably most irreplaceable, plant species include the mature Canary Island date palm (#4) in Block 1 (adjacent to Pine Street), Port Orford cedar (#15) in Block 2 (adjacent to Green Street), Siberian elm (#18) in Block 3, and Deodar cedar (#9) in Block 5. Three large blackwood acacias (#2), frequently planted in the Martinez area, are located in Blocks 3 and 6 (see Major Vegetation Map, Figure 46). Removal of any of these trees would constitute a significant biotic impact as these are mature, healthy specimens of their species.

As presently conceived, removal of only one of these trees is required to accommodate the Detention Facility (see below). It is proposed that parking facilities will be constructed in the remainder of the site and the aforementioned trees can be accommodated in the parking areas. (See Mitigation Measures section of this report for a discussion of this subject.)

The blackwood acacia (#2) on Block 3 may require removal to accommodate the Pine Street diversion. This impact may not be mitigatable depending on the final plans for the diversion. The Siberian elm (#18) should not be affected.

Future court needs may be met in the future by constructing an annex to the Detention Facility on the north side where Pine Street divides Blocks 1 and 4. This construction may be accomplished without requiring the removal of the Canary Island date palm (#4) on Block 1. However, a "large" court addition in the future could affect this tree. This is particularly true if the Post Office is not removed.

b. Removal of Residential Areas

Removal (or razing, as has recently occurred in Blocks 3 and 5) of the existing residential areas in portions of Blocks 4 and 5 and all of 6 would eliminate the most diverse vegetation and valuable wildlife habitat within the proposed site.

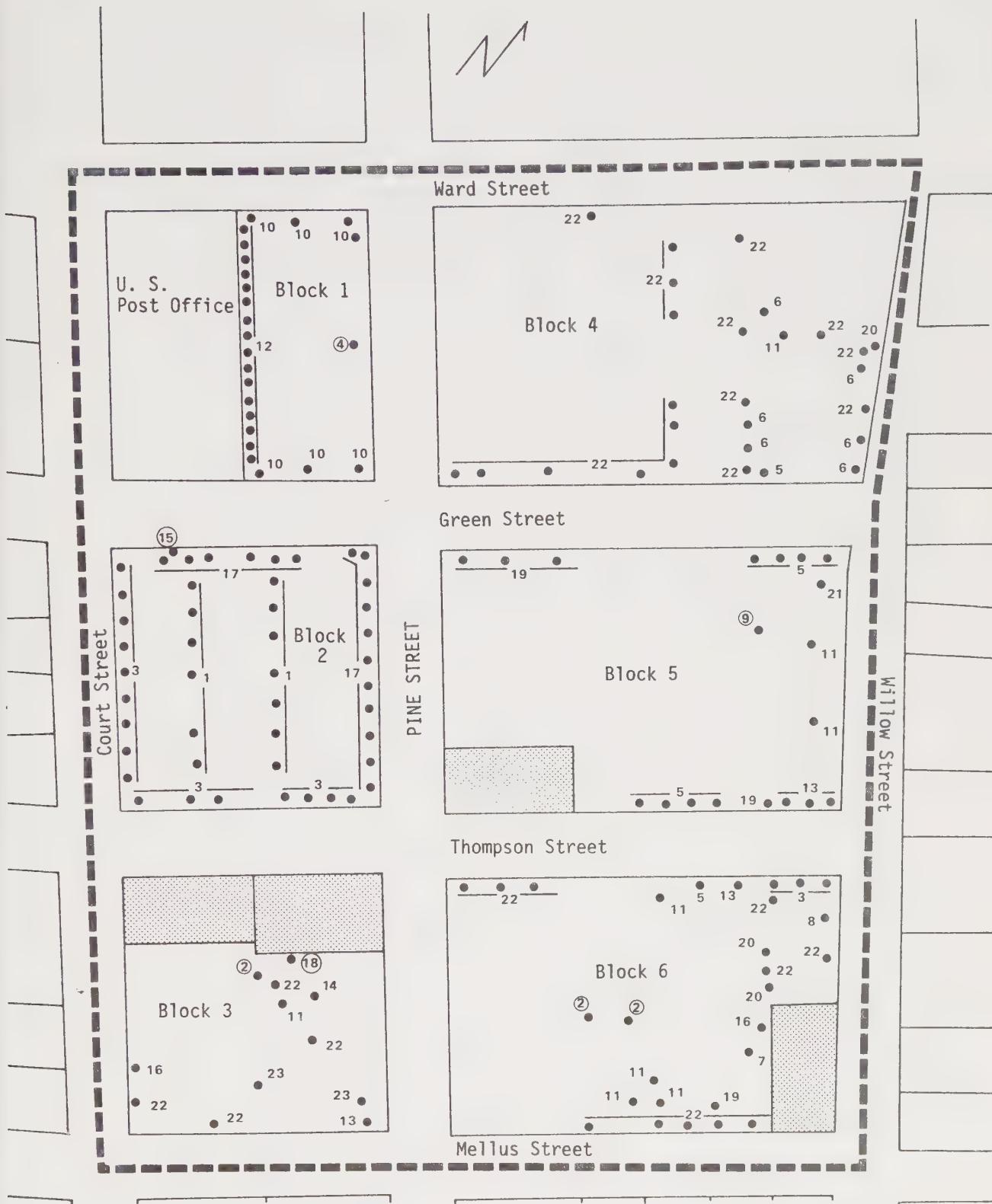
The significant trees to be affected will be the Deodar cedar (#9) in Block 5 and the blackwood acacias (#2), in Block 6. Razing existing structures can be accomplished without endangering these specimens (see Mitigation Measures section of this report). Disruption of the vegetation-wildlife complex which is established on the site will be an unavoidable impact. Certain animal species will be able to relocate elsewhere while others will be destroyed. Such impacts are unavoidable but not necessarily irreversible. As replanted vegetation becomes established wildlife may also become reestablished.

c. Construction of the Detention Facility

Existing vacant and/or recently razed areas have almost no value for wildlife, and for the most part support weedy vegetation. These areas are not aesthetically pleasing and are currently unused. Construction of the County Detention Facility would have a positive impact on biotic resources as it would include landscaping that is coordinated with existing county facilities in the Civic Center. The poor biotic value that exists could not be further decreased, and the presence of healthy, maintained vegetation would be attractive in this urban environment. This positive impact constitutes a mitigating measure in itself.

Figure 46

MAJOR VEGETATION OF CONTRA COSTA COUNTY
DETENTION FACILITY SITE



② Significant Trees

Under Negotiation for
County Acquisition 2/4/77



Table 13

List of "Major Vegetation of Contra Costa County Detention Facility Site"
(See Figure 46)

1. Alder	13. Maple
2. Blackwood acacia	14. Mexican elderberry
3. Camphor tree	15. Port Orford cedar
4. Canary Island date palm	16. Purple leaf plum
5. Catalpa	17. Red Horsechestnut
6. Chinese pistache	18. Siberian elm
7. Corkscrew willow	19. Sycamore
8. Cutleaf birch	20. Toyon
9. Deodar cedar	21. Victorian box
10. Dracaena palm	22. Walnut
11. Fruit trees (apple, peach, apricot, fig, lemon)	23. Valley Oak
12. Italian cypress	

9. Social Considerations

The intent of this section is to identify and evaluate the project's impacts upon the social environment. Attention is focused upon the social environments of the various groups likely to be affected by the project. In evaluating impacts, emphasis is placed upon the project's potential to cause an improvement in or deterioration of such characteristics of the social environment as livability, stability, cohesiveness, security, harmony, and lack of disruption or tension. Because of a desire to evaluate the significant impacts, at times this analysis departs somewhat from this theoretical context to examine other human impacts. This is done in instances where this chapter appeared the most logical place to discuss a specific human impact. Human impacts of an economic nature are examined in the following section (Economic Considerations).

The project will induce social, cultural, and demographic impacts which will affect the County's various social groups in differing ways and with varying intensity. Consequently, the impact assessment is presented separately for each group. The groups examined are: (1) Total County Population, (2) City of Martinez Population, (3) Project Environs Population, (4) Detention Facility Inmates, (5) Facility Staff, and (6) Facility Visitors. In analyzing the impacts upon each group, evaluations are made of both positive and adverse impacts, and suggestions of measures for mitigating the adverse impacts are presented.

In analyzing social and demographic impacts, it is often not possible to express the impacts in quantitative terms. Consequently, impacts must be described as small or great, substantial or insignificant, etc. Such inexact determinations may be subject to interpretation, but in most instances they provide the only method by which impacts may be discussed.

a. Countywide Impacts

Approval of the project will result in better protection for society because the project will provide adequate capacity and more secure detention. Improved protection is also likely to result from the provision of a better living environment for those incarcerated. By providing prisoners with a more humane environment and improved programs, the facility is likely to help reduce the feelings of hostility and alienation of those who are incarcerated, which should result in greater harmony and less antagonism in society. In addition, by resolving a major County problem, approval of the project should result in a reduction in tension and anxiety throughout the County.

Adverse impacts will be minimal because the new facility will represent a considerable improvement over the existing facility.

Perhaps the only significant negative impacts are theoretical; that is, those that result from selection of this particular project rather than other alternatives. For example, with regard to other possible alternatives, a primary concern is the construction of a single facility located in Martinez. A discussion of this and other alternatives along with a comparative evaluation of the impacts of this project and the alternatives is provided in Part D, Alternatives to the Proposed Project.

b. Impacts Upon the City of Martinez Population

Impacts upon the entire City of Martinez population include those discussed in the previous Countywide Impacts section. However, because of the location of the facility in Martinez, there will be additional impacts which will affect the Martinez population, and particularly the population of the project environs.

Citywide impacts include increased traffic congestion and the general inconvenience resulting from more people in the city. These impacts are discussed in the circulation section. Impacts upon the project environs population are discussed in the following section.

c. Impacts Upon the Project Environs Population

This section examines the project's impacts upon the social environment of the neighborhoods immediately surrounding the project. The analysis is not confined to the residents of the area but also considers area businessmen, workers, and visitors. The area designated as the project environs is identified in the Social Considerations section of the Environmental Inventory; it encompasses most of the Martinez central business district, the County Civic Center, and surrounding residential areas.

An important determinant of the project's impact upon the project environs population is the physical size and appearance of the structure. Visibility and prominence will tend to amplify the negative aspects of the facility because awareness of the facility's presence contributes heavily to its impacts upon people. To provide all the necessary facilities and satisfy the space requirements specified by state standards and national guidelines will necessarily result in a very large structure. The facility will be 4 stories high and have approximately 186,000 square feet of floor space.

It should be noted that the impacts of a Detention Facility are not new to Martinez. The present main jail is located at the corner of Pine and Escobar Streets only a few blocks from the project area. However, the existing jail is well-buffered from central Martinez residential and commercial areas because it is surrounded by County buildings and parking lots. The impact of its presence

is additionally reduced because it is relatively small and is located between two large buildings. In addition, when the new facility is opened, the branch jail will be closed and its inmate population (approximately 50 persons per day) will be transferred to the new facility, thus increasing the number of persons detained in the Civic Center. The new facility will be considerably larger than the existing one, and will probably not be as well buffered from residential areas by other structures. Therefore, the local impacts will be greater than that of the existing facility.

Favorable impacts upon the project environs population include those which will accrue to all county residents (see Countywide Impacts). In addition, the project may help to improve the physical condition of the County Civic Center. Because of uncertainty over the project, the project site has been somewhat neglected in recent years. This has resulted in the somewhat unorganized and unkempt condition of the site. Replacing vacant lots and parking areas with buildings and landscaping is likely to improve the appearance of the Civic Center and enhance the area's attractiveness. In addition, resolution of the jail issue should result in a reduction in uncertainty over future development in the Civic Center area and thus may increase neighborhood stability.

Adverse social impacts primarily concern the project's potential for making the area a less pleasant and comfortable environment for living, working, operation of a business, or visiting. The project may affect the residential quality of adjoining residential areas and increase the potential for change, particularly along its southern and western boundaries. Specific adverse impacts include the project's effect upon the "small town" character of Central Martinez, the psychological impact of the presence of the inmate population, the likelihood of people moving out of residential areas, the effect on views from certain residences, the concern over released or escaped prisoners, and the possible transformation of residential areas to other uses. Additional social impacts relate to aesthetics, property values, and nuisance factors such as traffic and construction noise. In the following discussion, these impacts are examined separately.

i. Impacts Upon "Small Town" Character of Martinez

The Martinez General Plan expresses the desire of the City of Martinez and many of its residents to preserve the smaller scale "old town" environment of Central Martinez and the central city's "small town" character. There is concern about the impacts of large buildings upon the "small town" character and the effects of County expansion upon the stability of residential areas. The change of an area's character can be socially disruptive because it can transform a familiar and comfortable environment into an unfamiliar and uncomfortable environment which may be unpleasant or undesirable to some persons. Adverse impacts can

result from both the process of change - change in itself can be disruptive - and the transformation of a desirable environment to a less desirable one. On the other hand, some people view change as desirable.

Such concerns relate directly to the project, because such a large structure may contribute to a further deterioration of the "small town" character of Central Martinez. However, it should be noted that the existence of several large government buildings on the eastern edge of the central business district has already eroded the city's "small town" character to some extent.

ii. Psychological Impact of Presence of Inmate Population

The increased size and visibility of the new facility will increase the environs population's awareness of the presence of the detention facility and the inmate population. This may cause an adverse psychological impact upon some local residents, workers and businessmen simply because some people experience feelings of aversion and discomfort from the proximity of prisoners and correction facilities.

iii. People Moving Out of Neighborhood

It is possible that the construction of the project, both the act of constructing it and its presence once constructed, will induce some of the residents living nearest the site to sell their homes and move elsewhere. This in turn might result in a decline in neighborhood cohesiveness and character, and a deterioration of the local social environment. Such environmental changes would be manifest in such factors as loss of neighborhood friends, unfamiliar neighbors, less knowledge concerning people's behavior, and concern over the unpredictability of neighborhood turnover and change. In addition, those induced to move out of their homes would be similarly affected by a move from a familiar and stable social environment to a new and unfamiliar one.

iv. Views/Visual Impact

Although the issue of visual impact is discussed in depth in the Physical Impacts section, it also deserves mention as an adverse social impact. Some residences on the lower slopes near Willow Street (on the east side of the project) will have their views dominated by the facility. This could result in decreasing neighborhood attractiveness in those areas affected.

v. Released Persons and Escaped Prisoners

There may be some concern that newly released prisoners will disturb persons and property in the areas near the project. Some

people feel that a large facility located in close proximity to residential areas will provide increased opportunities for such activity. In addition, there is fear that escaped prisoners will intrude into residential areas. Although the occurrence of actual escapes are rare, roughly 4 to 5 persons escape from transporting officers each year according to the Sheriff -Coroner's Department.

vi. Intrusion of Strangers into Neighborhood

Currently during jail visiting hours there are visitors and associated persons wandering about outside of the jail. The concern is that the larger size of the new facility and expanded visiting hours will increase this activity, and the new location, because of its proximity to residences, will cause a shift of the activity into residential areas. In addition, there is concern about crowds demonstrating at the jail and possible violence.

vii. Threatened Change of Land Use and Rezoning

Economic forces might act to induce a change from residential to other uses in the areas near the project. Although this is a land use and economic issue, it is also a social issue because it affects neighborhood stability. Civic Center expansion might bring about a demand for office, commercial, or more intensive residential uses in areas bordering the Civic Center, thus disrupting the existing residential stability.

A related concern is that the facility's presence will cause a decline in property values in bordering residential areas, and a consequent decline in residential desirability. If this occurs there might be a resulting demand for a change in the area's zoning to include uses less affected by proximity to a detention facility. Thus a decline or a rise in property values could cause a change of land use or zoning. The influence of a change in property values is discussed in the Economic Considerations section.

Any change in land use from residential to other uses induced by the project will result in a decline in the housing supply in the area, unless there is a conversion to multiple dwelling units. Because the project environs provides a source of low to moderate cost housing, a rapidly disappearing commodity, removal of housing would reduce a sorely needed resource and thus could result in a significant adverse impact.

viii. Other Impacts

Other social impacts relate to parking and traffic, noise, and visual/aesthetic considerations. These impacts are not discussed

here because they are analyzed in depth in other sections (Circulation and Air Quality and Noise). However, it should be noted here that nuisance type impacts such as increased noise and traffic could be expected to reduce the attractiveness of the area as a place to work or live, and affect neighborhood stability and livability.

d. Impacts Upon Detention Facility Inmates

Probably the most significant impacts of the project will be those affecting the facility's inmates. Because the new facility represents a significant improvement with respect to the existing facilities, almost all impacts will be beneficial. The following impact analysis compares conditions in the existing main jail with conditions which would result from construction of the proposed facility, and evaluates the impact which changes in conditions will have upon the inmates. In order to focus upon the most important points attention to detail is limited, particularly in describing conditions in the present facility.

The following discussion, which provides a fairly extensive description of inmate impacts, focuses on four general areas: intake and release, general living environment, inmate safety, and inmate programs and services. Conditions in the present facility are discussed first, followed by a description of conditions in the new facility and the resulting impacts upon the inmates. The impact upon the inmates of locating a single facility in Martinez is discussed in the Alternatives section of this report.

i. Intake and Release

In the present facility, the intake and release processes are confusing, demeaning to the inmates, and less than sufficiently secure for both inmates and staff. Presently, intake and release are carried out in the same area, which results in opportunity for passing contraband, reduced security, and excessive confusion. Another problem is that there is no separate intake area for female prisoners. They are currently brought into the facility through the male booking area or through the public reception area, in either case a demeaning experience.

Intake and release procedures in the proposed facility will be less confusing, less demeaning, and more secure than those in the present facility and will result in enhanced safety and less pressure and strain for the inmates and staff. The intake area will include a comfortable waiting lounge for all inmates except

those proving particularly troublesome. The new facility will have separate intake and release areas and a separate intake area for women, which will eliminate the present confusion and security problems, and the demeaning nature of the intake process.

Temporary holding facilities designed to hold inmates after booking and before assignment to a residential unit are provided by the lounge in the intake area and by a "quick turnover" housing cluster with 36 single occupancy rooms. An intake feature of the proposed facility not presently provided in the existing facility is the provision of medical screening during booking and the availability of medical housing and expanded medical services within the facility. These medical procedures will result in improved health care for inmates and a more healthful living environment.

ii. General Living Environment

The present detention facilities provide inmates with a living environment which is inadequate according to present state and Federal minimum jail standards; living quarters are overcrowded, not sufficiently secure, and lacking in privacy and personal space. The present main jail is consistently overcrowded. Although its rated capacity (by the State Board of Corrections) is 104, it has an average daily population of approximately 160, and occasional peak occupancy levels of 180 or more. Overcrowding and lack of personal space and privacy detract considerably from the facility's living environment and can make life in jail quite stressful. (See Background Report, Chapter 20, Visual Analysis for a detailed discussion of this subject.)

Additionally, the present facility is noisy and dark, has inadequate space for recreation or other programs, provides only one shower facility per 30 inmates, and is not air conditioned, except in the administrative area.

The new facility will provide a greatly improved living environment in virtually every respect. It will provide an environment more akin to a normal living environment in American society. Consequently, the facility will reduce the severity of the impacts upon the inmates which result from a radical change in living environment. Such traditional features of jail environments as long dark corridors and the use of bars are eliminated. By providing sufficient capacity it will eliminate problems which presently result from overcrowding, and should ensure a less tense and hostile living environment. In addition, by its use of smaller modules with small day rooms and eating facilities, and freedom of movement within the modules, it will encourage constructive inmate-staff relationships by providing contact between smaller inmate groups and

staff members on a continuing basis. Its small scale living situation should also foster improved relations among the inmates.

The new facility will be considerably more spacious than the present facility. Cell space will be increased from approximately 15 square feet per person (if not overcrowded) to 70 square feet per person, and day room space will be expanded from less than 10 square feet per inmate to more than 25. The provision of adequate space, the installation of smaller dayrooms and eating facilities, and the use of single occupancy cells with central cluster areas should better satisfy each inmate's need for personal space and privacy while also providing contact with others.

iii. Inmate Safety

Because of its continually crowded state and its internal design, the present facility does not provide for adequate prisoner safety. It does not have the ability to adequately separate felons from misdemeanants, and aggressive or submissive persons from the other inmates - for their own safety and the safety of others. Consequently, the present facility is unable to insure inmate safety. The safety of prisoners is also affected by the structural inadequacy of the present facility. It does not satisfy fire code requirements and its ability to withstand a substantial earthquake is questionable.

Inmate safety will be enhanced by the provision of adequate segregation in the new facility. The use of single cells along with adequate capacity ensure that all necessary segregation requirements can be met at the cell level; the installation of small dayrooms provides the opportunity for significant segregation in these areas as well. Additionally, the new facility will satisfy all building and fire code requirements, thus reducing potential danger to inmates.

iv. Inmate Services and Programs

The present detention facility is inadequate in its provision of many basic inmate services such as recreation and counseling, visiting, libraries, medical and dining facilities. Space for programs is limited, and consequently programs are limited. There are no libraries in the present main jail, and medical facilities are very limited. There are no facilities to allow for separation of ill inmates from other inmates, and a paramedic is available only during normal working hours.

The present facility's visiting space and programs are not sufficiently adequate to satisfy the needs of the inmates. Visiting by family and friends is currently limited to a few hours on Sunday afternoons, and there are only 8 spaces available for visitors.

Visiting by lawyers, clergy, and bailbondsmen is limited by the presence of only 3 visiting booths. Limitations on time and space mean that visits are infrequent, short, and often inconvenient for those visiting.

The proposed facility will provide significantly expanded opportunities for programs and services which will benefit inmates. The new facility provides separate exercise areas for each housing cluster. This will enable the staff to program considerably more time for recreational activity, thus providing opportunities for adequate physical exercise and reducing the monotony and boredom of jail life. The new facility will also have a library, which will contain legal and reference volumes. Popular general works will be kept in each housing module. There will be one classroom, as well as combination chapel/classroom, both of which can be used for various classes, group counseling sessions, service organization meetings (with inmates), etc. There will also be two counseling rooms available for tutoring, counseling, and other activities. With these facilities available, there will be a significant expansion in the number of classes and special programs made available. The library will provide opportunities for legal research.

The proposed facility will have an infirmary with individual medical housing for 26 inmates, and much more extensive equipment and supplies than the present main jail. Services of a paramedic will be available 24 hours a day. Consequently, the availability of medical services for sick inmates will be significantly enhanced, and there will be facilities for separation of sick persons from other inmates, thus reducing the potential for spreading contagious diseases (see Project Description section of this report for more detail).

The new facility will be equipped with significantly expanded visitor areas, with more privacy provided. Visiting will take place at the individual clusters, with 17 open-contact and 21 non-contact visiting rooms provided. Opportunities for visiting by family and friends will be greatly expanded; the Sheriff's Office expects to be able to allow visiting at almost any time. Visiting facilities for lawyers, bailbondsmen, clergy, etc., will also be improved, facilitating interaction between these persons and the inmates. By improving and expanding visiting opportunities, the new facility will increase opportunities for contact between inmates and the outside world, making life in prison less isolated and reducing the feeling of being completely cut off from friends and family.

Another positive feature will be the inclusion of court rooms in the facility. This will significantly limit the present demeaning situation of transporting inmates through the streets to and from court.

e. Impacts Upon Detention Facility Staff

The preceding Inmate Impacts section provided an extensive discussion of the living conditions in the existing facility. Factors causing an undesirable living environment also have a deteriorating influence upon a facility's working environment. Presently, working conditions in the Main Jail are poor because of such factors as overcrowding, noise, poor lighting, poor ventilation, and lack of air conditioning. The existing facility also causes security problems for staff because of such factors as lack of opportunity to segregate potentially disruptive or destructive prisoners and the necessity of providing intake and release in the same area. Other negative features of the present facility include inadequate office and kitchen facilities for staff working in these areas, inadequate space and facilities for persons who teach classes and provide group counseling, and limited visiting booths (3 total) for visiting attorneys, bailbondsmen, etc.

The new facility will provide a significantly improved work environment for both full and parttime staff and those who operate programs through or in the facility, such as teachers, counselors, probation officers, attorneys, and bailbondsmen. The new facility will have sufficient capacity to eliminate overcrowding, will be more spacious, climate controlled, adequately lighted, and will have uncovered windows. Kitchen and office space and equipment will be considerably improved, 4 rooms and additional equipment will be provided for classes and counseling, and the number of visiting rooms will be expanded to 38, and made more spacious and private.

The greatly improved work environment of the proposed facility should result in greater staff efficiency and morale. Both the improved environment and the use of small modular units comprised of cells, day rooms, and dining areas should result in improved inmate-staff relationships. Working with smaller groups should make it easier for staff members to develop constructive relationships with prisoners, and perhaps to provide some beneficial counseling and guidance. Such opportunities should enhance job satisfaction considerably. The improvements in staff working conditions are likely to reduce job stress, improve mental outlooks, and increase stability of employment.

One aspect of the new facility, the residential unit design, represents a potential security risk to staff. Housing modules are comprised of 48 single rooms (some modules have a smaller number of rooms) with a common dayroom and an exercise area. The modules are secure units (escape is not possible), with freedom of movement allowed to inmates within the modules. Each module will be supervised by an unarmed Deputy Sheriff, who will mix freely with the inmates. The purpose of this arrangement is to

provide for constructive contact between inmates and staff. However, there is concern about security of the staff person assigned to work alone among 48 inmates. This type of arrangement has worked well in certain federal facilities in the country (e.g., San Diego), but the specific design planned for the project has not yet been used in a county detention facility.

f. Impacts Upon Visitors

The present main jail facility is inadequate for visiting in almost all respects. The public reception area is a very small passageway, without chairs, benches, or restrooms. In addition, most female inmates are transported through the area during intake. Space is so limited that visitors are often forced to wait outside. Actual visiting spaces are inadequate and cramped, and privacy during visits is limited. There are only eight visiting spaces for friends and relatives and 3 booths for lawyers, bailbondsmen, and clergy. In addition, visiting hours for friends and relatives are currently limited to a few hours on Sunday afternoon. The shortage of visiting spaces and booths and the time restriction upon visits from relatives and friends frequently results in visits being rushed and unnecessarily brief.

The proposed Detention Facility will have significantly improved visitation facilities and scheduling. There will be parking spaces reserved specifically for visitors, and much larger and improved visiting areas. Visiting areas will be provided in each residential cluster, with 17 open contact (100 square feet each) and 21 non-contact (60 or 80 square feet each) visiting rooms provided. The amount of space provided and the design will ensure greater privacy during visits, provide a more comfortable and relaxed visiting atmosphere, and facilitate the provision of inmate services by attorneys, bailbondsmen, etc. The improved visiting facilities will provide the opportunity to expand visiting hours. The Sheriff's Office presently anticipates being able to allow visiting at almost any time once the new facility is opened. This will greatly expand opportunities for visiting, as well as make visiting much more convenient.

Again, adverse impacts are those related to other potential alternative projects. The main concern with respect to visitors involves the inconvenience to visitors of constructing a single facility located in Martinez. This matter is discussed in the Alternatives section of this report.

10. Economic Considerations

Both construction and operation of the proposed project will generate significant economic impacts. Construction of the facility will require the expenditure of approximately \$20 million over a three year period. Approximately \$500,000 was spent during the first year; the balance will be spent during the following two years. In addition, operation of the new facility will be considerably more costly than operation of the present facility.

The intent of this section is to identify and evaluate the project's economic impacts. Emphasis is placed upon the project's influences upon the economic environment of people affected by the project. Attention is focused upon such economic factors as retail sales, expenditures for salaries and materials, property values and employment. This report attempts to identify all significant human impacts of an economic nature.

The presentation of impacts is organized according to the areas or economic groups affected. Discussion begins with the largest group impacted, the total county, and gradually narrows to the groups living and working in the facility. Impact assessments are presented for the following groups: (1) Total County, (2) City of Martinez, (3) Facility Environs, (4) Facility Staff, (5) Facility Visitors, and (6) Facility Inmates.

a. Countywide Impacts

Because of the magnitude of the project and the fact that it provides for the detention needs of the entire county, the proposed Detention Facility will generate countywide impacts. The expenditure of \$20 million dollars of public money will stimulate the county's economy and provide employment for some county residents. Operation of the facility once it is opened will provide additional employment and increased spending for supplies and services. Additionally, the expenditure of \$20 million and the increase in operational expenses will cause a significant impact upon County government financing. The following discussion of countywide impacts focuses upon (a) the project's tendency to stimulate the county's economy, (b) the project's impact upon County government financing, (c) other resulting economic impacts, and (d) mitigation measures.

i. Stimulation of the County's Economy

The project will stimulate the county's economy in the short term through the expenditure of funds for labor and materials, and in the long term through increased expenditures for facility

operation. However, it should be noted that the increase in expenditures for facility operation may also have a depressing effect upon the county's economy if it necessitates a future raise in taxes for county residents (see following Section - Impacts Upon County Government Financing - for further discussion). Economic stimulation will result from the creation of additional employment opportunities, the purchase of goods and materials.

The construction manager, Turner Construction Company, has estimated that during most of the 23 month construction period an average of 70 construction workers will be employed daily. The exception to this pattern will be a 4 to 6 month period of intensive activity when an average of 150 persons will be working daily. This high intensity period will begin 2 to 3 months after the initiation of construction. Because there will be a need for people with different skills during different stages of the project, most workers will not be employed for the project's full duration. The average length of employment is expected to be 6 months. Given these expectations, approximately 350 people will be employed for an average of 6 months each. Given the county's high unemployment rate (10.4% in October 1976) and the particularly high unemployment rate among construction workers (nationwide rate was 19.1% in October 1976; no local statistics are available), the number of job opportunities which the project will generate represents a significant positive benefit to the county.

It is not possible to determine what percentage of the construction jobs will be made available to county residents, nor is it possible to ensure that a certain proportion will be provided to county residents. The construction manager, Turner Construction Company, will manage and coordinate construction activities. The actual construction work will be done by subcontractors, who will be hired by the County. The County must let bids for each subcontract and by law must hire the lowest responsible bidder who meets all the County's requirements. If the lowest bidder is not selected, a written justification explaining why that bidder was rejected must be made. The County legally cannot require that any of the subcontractors be based in any particular area, such as Contra Costa County. Consequently, the subcontractors who are hired to construct the project will not necessarily be local contractors. However, subcontractors from out of the area can be expected to hire some local workers, since it is customary for non-local contractors to send only a core staff of primarily supervisory and management personnel from their home office and to hire additional personnel locally. Given this expectation, it can be assumed that many of the construction workers hired will be county residents; but it is not possible to accurately predict the number.

Since some of the persons employed during project construction will be county residents, it is expected that a significant portion of their earnings will be spent within the county on housing, goods, and services. This spending will provide a direct stimulus to county retailers and to the county's economy in general.

Fully 60% of the construction budget, or \$9.2 million, will be spent on materials and furnishing for the facility. Some of the necessary material cannot be purchased within the county, given the quantities necessary for this project. Nevertheless, the County Public Works Department expects that approximately two-thirds of the \$9.2 million will be spent within the county, providing substantial stimulus to county wholesalers and the overall county economy. The increase in business volume resulting from the project will result in a slight increase in the number of jobs available in the county, since certain merchants may have to hire more employees to handle increases in volume.

Long-term stimulation of the county's economy will result from the increased cost of operating the new detention facility. However, this stimulation may be counter-balanced to some extent by the depressing effect of a tax increase, if taxes must be raised to pay for increased operating costs (see following Impacts Upon County Government Finance Section for a future discussion). Estimates made by the project's programming consultant, Facility Sciences Corporation, indicate that personnel costs for operation of the new facility will be more than double present levels, and that operation of the facility will result in an increase of approximately 70 new full time county positions. This will benefit the county's economy by providing additional employment opportunities for county residents.

It is also expected that other operating costs, such as the cost of supplies and services, will be greater for the new facility (see following section). This will result in increased County expenditures for supplies and services, which will provide a stimulus to the county's economy. It will also increase the operating costs of County government, and thus is likely to result in a tax increase.

ii. Impacts Upon County Government Financing

The project will generate a number of impacts upon County government financing. These include a loss of tax base, increased detention facility operating costs, and lost opportunity costs.

(a) Loss of Tax Base. A loss of tax base will occur because properties which the County has purchased or will purchase in order to create a site for the facility will be removed

from the tax rolls once they become County property. The County does not pay property tax on properties which it owns. The loss of tax base resulting from the construction of the facility will be minimized because the County already owned most of the site prior to the decision to locate the detention facility there. The County has been purchasing properties in the site area in recent years in order to obtain ownership of land within the boundaries of the County Civic Center as designated in the 1963 Civic Center Plan. At the time the decision to construct the facility on the civic center site was made only four properties within the site were privately owned. These included two doctor's offices, a boarding house, and a single family residence. The County has appraised these properties at the following values:

Doctors' Offices	\$ 76,000
Doctor's Office	110,000
Boarding House	51,000
Single Family	
Residence	<u>50,000</u>
 TOTAL	 \$287,000

The assessed value at 25% of market value is \$95,700 which represents the probable maximum loss in tax base which will result directly from construction of the Detention Facility. This loss will affect not only County government, but also all the other agencies (the City of Martinez, school districts, etc.) which derive revenue from taxes on these properties.

(b) Increased Detention Facility Operating Costs. Although increases in operational expenditures for the proposed detention facility will stimulate the economy, they will be based on the adverse effect of increasing the expenditures of County government. The new facility will cost substantially more than the existing facility to operate, and this increase must be paid out of the County budget. An estimate of the magnitude of this increase can be obtained from an analysis of the current operating costs of the main and branch jails and the projected operating costs of the proposed facility. It is important to note that estimates of the project's operating costs are based on a capacity occupancy of 383 inmates, whereas estimates of current costs are based upon current occupancy levels (e.g., an average of 251.8 inmates were incarcerated per day in the last 3 months of 1976).

Facility Sciences Corporation has estimated that the proposed facility will require about 134 staff members at a yearly cost of \$2,631,400 (Facility Sciences Corporation,

Contra Costa County Detention Facility Service Program, December 10, 1976, p. VIII-6). Current annual staff expenses for the main and branch jails are \$1,076,000, yielding a difference of \$1,555,000. On a per inmate (bed) basis, the project's estimated yearly personnel costs are \$6,887, while those of the current facilities are \$4,274. Thus, the project is expected to cost 61% more per inmate for personnel. It should be noted that this increase will occur gradually, although there will be a significant increase at the time the new facility begins operation. Increasing inmate population is expected to continue causing increases in staffing costs for the existing facilities, until the proposed facility begins operation. When the proposed facility begins operations, it is not expected to be filled to capacity. Staffing costs are thus expected to be somewhat less than \$2.6 million until the facility approaches capacity occupancy levels. (For comparison purposes, the project's staffing level of 134 (for 383 inmates) is only slightly greater than the staffing level of 117 proposed for the previous 1975 County "Detention Center" project (capacity of 343). On a per inmate basis, the project calls for 0.349 staff per inmate; the "Detention Center" called for 0.341 staff per inmate.

Estimates of all operating expenses other than personnel expenses are \$708,000 per year for the current operation of existing facilities and \$1,056,000 (preliminary estimate) for the proposed facility. On a per inmate basis this represents \$2,810 for the existing facilities (252 inmates) and \$2,764 for the project (383 inmates). Thus the proposed facility will cost approximately the same for non-personnel operations as the existing facilities.

To finance operational cost increases, the County may have to transfer funds from other projects or increase property tax revenues through the tax rate. (This assumes that outside sources of revenue, such as federal revenue sharing or special aids and grants, are not available.) Although the project will not be operable until 1979, it is illustrative to assess the impact of a \$1 million tax increase upon the County's current tax base (it should be noted that by 1979, the tax base will be greater than it is presently). Raising an additional \$1 million based upon the Countywide 1975-1976 net assessed valuation of \$2,496,322,084 would require an increase in the tax rate of \$0.04. A \$0.04 increase in the tax rate would result in a \$4.30 increase in the yearly property tax bill of a \$50,000 owner-occupied home.

(c) Lost Opportunity Costs. Another concern resulting from the proposed project is that the expenditure of \$20

million of County funds means that the opportunity to spend the money for other projects has been lost. In addition, the County's financial resources will be reduced by \$20 million. Other projects that might have been funded with the \$20 million will have to either be funded from other sources or not undertaken.

(d) Other Impacts. One concern about the cost of the project is that other alternative proposals which satisfy the County's detention needs are potentially more directly economically advantageous to the County. This issue is considered in Part II., D., Alternatives to the Proposed Action, which evaluates alternatives to the proposed project. The concern is that other alternatives might result in lower land, construction, or operating costs.

An additional consideration is that construction of the proposed project might lead to subsequent studies and projects which will require additional funding to undertake. This concern arises because the proposed project and its associated parking development will occupy virtually all remaining vacant County Civic Center property, thus depriving the County of most of its expansion potential in the civic center. Consequently, the County may decide in the near future to plan for final civic center development and determine how future needs for office space and parking might best be met. Also, inmate capacity projections indicate that the County will need to provide additional detention capacity during the 1985-1990 period. The County has begun planning to meet those needs.

Another impact upon County government financing involves the need to relocate County government operations presently located within the project site. These operations include the Office of Economic Opportunity, the Sheriff's training component, the Health Planning Office, and the Community Gardens Project. Since these organizations presently occupy County-owned buildings, their relocation will result in additional expenses to the County as office space is either rented or purchased elsewhere. Their relocation will also disrupt operations of the organizations involved, and both inconvenience and increase transportation costs for workers who are transferred to new offices further from their homes. Present plans (1/4/77) are to relocate all operations except Community Gardens elsewhere in Martinez, and to locate Community Gardens in central County near Concord or Pleasant Hill.

iii. Other Countywide Impacts

In addition to the direct stimulation of the economy, the project will produce other less tangible economic benefits to the county. The use of revenue-sharing funds for a capital project of long range usefulness represents a beneficial expenditure of these funds. Also some of the funds which are intended for the deten-

tion facility were raised from county tax revenues. Use of this taxpayer's money for a necessary project represents a reasonable, if not otherwise preferred use of these funds.

Additionally, the project will provide the economic value of an increment in service. This means that the project will result in an economic benefit to society simply by virtue of its existence and operation, particularly when compared with the level of service currently provided by the existing facilities. The proposed facility will provide a major service to society, and this service has a significant economic value even though the value is not directly manifested through the marketplace or the transfer of funds. Since the service provided by the proposed facility will be of considerably greater value than that provided by the present facilities, the increase in the value of service provided represents perhaps the greatest increment in service ever provided by a County project.

Another impact relates to the bolstering of the economy of the City of Martinez by U. S. and County taxpayers. Although the project provides an economic advantage to Martinez, it can be viewed as a disadvantage to other county communities which would benefit economically if the project were constructed in their area. Instead these communities are subsidizing through their taxes a project which benefits the City of Martinez, although this is a secondary impact and not the intent of the project. However, it should be noted that many communities would not want the project to be located within their boundaries despite the economic benefits.

b. Impacts Upon the City of Martinez

The impacts upon the City of Martinez are discussed in two sections: this one, which focuses primarily upon broad citywide impacts, and the following section which deals with the impacts that the project will have upon its immediate environs. In instances where overlap between the two sections occurs the discussion of the specific impact is presented in one section and referenced in the other.

The following discussion of the project's economic impacts upon the City of Martinez focuses on (a) impacts resulting from project construction and operation, (b) impacts which result from selection of the project site, and (c) measures which could be instituted to mitigate any adverse impacts.

i. Impacts Resulting from Project Construction and Operation

As discussed in the countywide impacts section, construction of the project will result in the expenditure of approximately \$6.1 million for labor and \$9.2 million for materials. Much

of this money is expected to be paid directly to the county work force and merchants. Since the project will be located in Martinez, some of the workers hired are likely to be residents of Martinez and surrounding central county communities.

The provision of employment opportunities for Martinez residents and the purchase of materials from Martinez merchants will stimulate the city's economy. Additional stimulation will result from construction worker expenditures in the city, and from increased detention facility operational expenditures. Since construction worker expenditures will accrue primarily to the central business district this issue is discussed in detail in the following project environs section. Increases in detention facility operation expenses will provide more local jobs, result in increased expenditures for materials and furnishings, generate more County employee spending in the central business district, and generally provide a positive economic impact upon the City of Martinez.

ii. Impacts Which Result from Selection of the Project Site

The selection of the specific civic center site for the proposed facility will result in both beneficial and adverse impacts upon the City of Martinez. It will increase public (i.e., County government) investment and employment in Martinez, and help ensure that a large segment of County government remains in Martinez. The construction of this major County project represents a commitment on the part of County government to both continue and increase its presence in downtown Martinez.

The selection of the civic center site minimizes some of the adverse impacts of the project. It minimizes the short-run impacts upon the city due to losses in property tax revenue. Such losses will occur when residential and commercial properties are removed from the tax rolls upon purchase by the County. Since the project site is comprised primarily of property previously owned by County government, the loss of tax base is minimized. Another concern regarding loss of tax base is that the project will cause a decline in the value of properties surrounding the project site. Although this concern is expressed by some persons, it is also possible that the project, by adding a new building and landscaping to a presently disordered project site, will increase the attractiveness of the surrounding area and thus result in a rise in property values. The selection of the project site minimizes the likelihood of a reduction in property values because the project is included as part of the civic center area, for which plans were developed in the early 1960's. Also, the addition of the facility to the existing complex, which presently includes a detention facility, is expected to have less of an impact than would introduction of the facility into an area where such uses are not now located.

Adverse impacts resulting from selection of the project site include the actual and potential loss of tax base, the possibility of a decline in neighborhood property values, and the threat of a change in land use. A direct loss of tax base will result from removal of the four privately owned properties located within the project site. The County has appraised these properties at \$287,000. If the properties were assessed at their appraised values, the loss in tax revenue for the Martinez City government would be \$1,248 during Fiscal 1976-1977. Losses for future years could be expected to parallel this figure and increase as property values in the area rise. The potential for a decline in property values and changes in land use in the areas surrounding the project site is discussed in the following project environs section. Any resulting decline in property values would result in a drop in tax revenue for the City of Martinez.

c. Impacts Upon the Facility Environs

The following discussion focuses on the economic impacts upon the area immediately surrounding the project site. The primary districts affected will be the County Civic Center, the central business district (CBD), and the residential areas surrounding the project site. The discussion of impacts examines economic impacts resulting from construction and operation expenditures, impacts upon Civic Center and CBD development, and impacts upon the surrounding residential areas.

i. Impacts Resulting from Construction and Operation Expenditures

Construction of the project will result in the expenditure of approximately \$6.1 million for labor and \$9.2 million for material and furnishing. Some of the jobs generated as a result of project construction may be taken by residents of the project environs, and some of the material and furnishing purchases will be made from environs merchants. Additionally, the environs might benefit from the rental or purchase of dwelling units by persons hired to work on the project.

Construction workers hired for the project are expected to spend a portion of their earnings in the Martinez Central Business District (CBD). To estimate the proportion of earnings likely to be spent in the Martinez CBD by construction workers, it is assumed that they will spend approximately the same amount as County government employees. Since the wages of construction workers will be somewhat higher than those of County government employees, this seems to be a reasonable assumption. Based on determinations of County employee spending patterns (\$14 per week in the CBD), the construction employees can be expected to spend approximately \$4,300 per month during most of the 23 month construction period and \$8,800 per month during the 4-6 month period of peak construction activity.

As previously noted, operation of the new facility will provide economic benefits through an increase in material and furnishing purchases and the creation of approximately 70 new permanent jobs. A portion of the material and furnishings can be expected to be purchased from environs merchants. Also, the additional full time employees can be expected to spend a portion of their wages in the CBD. If their expenditure habits parallel those of present County employees, the additional 70 employees can be expected to spend approximately \$50,960 per year in the CBD for goods and services.

Another stimulus to the CBD economy will result from increased visiting once the facility is operational. Construction of the new Detention Facility is expected to result in a significant increase in the number of inmate visits made by families, friends, and advisors. Visiting is expected to increase because more prisoners will be incarcerated in Martinez as a result of the transfer of some branch jail inmates and most of those inmates currently detained in other counties to the new facility, and because visiting facilities and hours will be substantially expanded.

Although it is difficult to assess the magnitude of the economic impact the visitors will have, it is reasonable to assume that visitors will spend some money on goods and services in Martinez, primarily in the CBD. An increase in visitation will result in an increase in visitor spending, and a positive economic impact on Martinez and the CBD.

ii. Impacts Upon Civic Center and Central Business District (CBD) Development

The construction of a major facility such as the proposed detention and courts complex (which will occupy approximately 88,000 square feet of ground area and a 6 square block site) will have a significant impact upon future Civic Center and CBD development. By deciding to construct the facility in the Civic Center, the County confirms its commitment to continuing to focus its operations in the Civic Center area. This allays some concerns that County government might immediately begin to locate its major operations and facilities outside of the Civic Center, and reduces uncertainty over Civic Center development. The affirmation of County government's commitment to the Civic Center and the construction of a major facility will also enhance the business potential of the CBD.

The construction of the detention facility precludes the use of much of the site for other purposes. It is possible that if the facility were not constructed other functions providing greater economic benefits to the area might be constructed on the site, but probably not in the near future. The construc-

tion of County government office buildings is an example of an alternative use with potentially greater long term economic benefit to the facility environs. Such a project would not generate the potential adverse psychological impacts which a detention facility might.

iii. Impacts Upon the Surrounding Residential Area

When the previous "Detention Center" proposal was being reviewed, residents of the neighborhood bordering the project site and Martinez City officials expressed concern that the project would result in a significant deterioration of overall neighborhood quality (County of Contra Costa, Draft Environmental Impact Report, Contra Costa County, California, Criminal Justice Detention Facility, January, 1975, pp. 195, 196.). They felt that this would result in a decline in property values for many of the residences affected. However, while County staff acknowledged the potential for decline, they also noted that it was uncertain that significant adverse impacts would be realized, and that there was a strong potential that benefits would result. (Ibid., p. 196; County of Contra Costa, Response Document and Second Appendix, Contra Costa County, California, Criminal Justice Detention Facility, April, 1975, pp. III-49, III-50.)

Although the present project represents a significant departure from the previous proposal, and many of its adverse characteristics have been modified, the potential for the project to cause a decline in neighborhood quality and a concomitant decline in property values still exists in a diminished capacity. Factors with the potential to contribute to such a decline include: (1) construction noise, traffic, and other attendant annoyances resulting from construction activity, (2) an increase in traffic flow once the new facility is opened, (3) the general sense of aversion many persons feel toward a jail, (4) the blockage or partial blockage of views from certain homes, (5) the intrusion of a large facility into a small scale residential neighborhood, and (6) the closure of 3 streets.

It can be argued that those who reside near the Civic Center currently live in an area which contains a jail, and that the replacement of one jail with another will have little additional impact. However, the new facility will be considerably larger, both in physical size and projected average occupancy, than the present facility which is buffered from residential areas by intervening County buildings and parking lots which surround it. The proposed facility will also be buffered (by parking lots and landscaping), but because of its size and location its physical presence will be considerably greater than that of the present facility. Consequently, it is reasonable to assume that the project will cause a considerably greater impact than that which presently results from the existing jail. In addition, the impact will occur in a slightly different area.

In many instances in which a project with an unfavorable image impacts a residential area, the anticipated effect upon property values tends to be overestimated because of emotional factors. However, it is possible that the property values of both those residences nearest to the project and those homes which may have their views significantly affected will either decline or at least increase at a slower rate than would have occurred had the project not been constructed. Because of the location and relatively low height of the project, significant impacts upon the visual environment have been substantially reduced. In addition, other residences less directly affected but still close enough to the project to be influenced by its presence might be mildly impacted.

On the other hand, some residences might actually experience a rise in property values, because of the decrease in uncertainty over civic center development and the transformation of a disordered project site into a more orderly and well-landscaped state. It is possible that the project will induce a demand for multiple family residential, office or commercial uses in the surrounding area, which would result in the likelihood of a rise in property values for some surrounding residences. However, such an occurrence, if it does materialize, will affect only a limited portion of the surrounding residences. The remainder would still face the possibility of a negative impact upon property values. However, as discussed in the Land Use Impacts section of this report, substantial land use changes are not likely to result from construction of the detention facility.

Another concern is that persons occupying residences and offices which will be removed by the project will be forced to pay more for housing or office space elsewhere. This impact would result from the high rates of interest which purchasers of properties must currently pay, and the high rate of housing and office inflation in recent years and its varying impact upon different areas. Additionally, there is the possibility that the moving of a doctor's office to another location could have an adverse impact upon his business. It is also likely to inconvenience and possibly cause financial hardship for patients who would be forced to travel further to visit their doctor. The persons who would be dislocated because of facility construction include the occupants of two doctors' offices and the residents and owners of a boarding house.

d. Impacts Upon Facility Staff

The primary economic impact of the project upon facility staff will be the creation of more staff positions. Approximately 70 new positions will be created to provide sufficient staff

to operate the new facility. Although these 70 new positions are based on occupancy levels at or near peak capacity, it is expected that most will be filled when the facility begins operation. This will occur because many of the new positions are required simply because the design of the facility will necessitate more intensive staffing. In addition, at the time the facility opens occupancy is expected to be close to design capacity thus ensuring that most of the new positions will be filled at that time. (Facility Sciences Corporation projects a peak daily population for 1980 of 335; this is 87% of the facility's design capacity.

Enlarging the staff may benefit present staff members by providing an increase in the number of positions with higher job classifications, thus providing opportunities for promotions. A benefit of selecting the Martinez site is that present Main Jail staff will not be forced to relocate or drive further distances to work as a result of constructing the new facility. However, persons presently working at the Branch Jail who will be transferred to Martinez may be adversely affected. A conceivable adverse impact of selecting the Martinez site is that there may be alternative sites which are more accessible to staff which might have been chosen.

e. Impacts Upon Visitors

Economic impacts upon visitors relate primarily to project location. A more accessible location decreases the cost and increases the convenience of travelling to visit the facility, and a less accessible location results in greater transportation costs and inconvenience. When compared with other possible locations, the Martinez civic center site exhibits some advantages and some disadvantages. It is a reasonably central location within the county, is near the intersection of the county's major east-west and north-south transportation routes (Highways 680 and 4), and is a convenient location for many central county visitors. It is also served by public transportation; a BART feeder bus serves central Martinez from the Concord BART station. Unfortunately, that is the only public transportation link which serves the facility, and because of difficult connections and the infrequency of service access from most parts of the county by public transport is poor. Also, neither BART nor the bus now operates on Saturday or Sunday.

Location of the Detention Facility in Martinez is less convenient for visitors from east and west county than a facility located in those areas would be. This is a particular concern with regard to west county, because approximately 54% of County resident inmates currently come from west County. At the same time

the facility is favorably located for many central county visitors and better serves east county visitors than would a west county facility.

A positive impact of the project upon visitors will be a significant expansion of visiting hours and visiting opportunities (number of visiting booths, etc.), when compared with the present situation.

f. Impacts Upon Inmates

The project will benefit inmates by providing increases in services and programs which have an economic value to them. These will include educational programs, vocational training and counseling, substantial law library facilities, etc.

11. Air Quality and Noise Impacts

Air Quality

a. Project Impacts

Future air quality for the project area was examined for the No-Project Alternative and Alternatives A through E (the proposed project). For carbon monoxide (CO), maximum eight hour concentration contours were developed based on modelled CO concentrations. (Carbon monoxide was selected since it is a good indicator of local vehicle emissions.) Total motor vehicle emissions of hydrocarbons, oxides of nitrogen and particulate were calculated for existing and future conditions in Martinez, the base year for all projections being 1980. Traffic assumptions are based on the traffic analysis for the project by JHK Associates. The projected motor vehicle emissions and CO concentrations are based on the most recent emissions document published by the California Air Resources Board (1976). Impacts of construction activities are also discussed.

Carbon Monoxide

Due to emissions controls, CO concentrations in the project area will decrease, despite a projected ten percent increase in traffic volumes. Prediction of the eight hour maximum CO concentration was made, using the BAAPCD model as noted previously. A background of 1.6 mg/m³ was derived, based on the projected traffic increase and emissions decrease for 1980, and the existing CO background concentration. Contours of the eight hour maximum CO concentrations (including background) are presented for the No Project Alternative and Alternative E in Figures 64 and 65. For purposes of the carbon monoxide analysis, the No Project Alternative is indistinguishable in impact from Alternatives A and B. Alternative C will produce slightly higher concentrations on Ward Street west of Pine Street because of increased traffic there. Alternatives D and E tend to shift traffic (and carbon monoxide emissions) from Pine Street to Court Street. North of Ward Street for Alternative E (Green Street for Alternative D) most of the northbound and southbound traffic flows on Court Street with Pine Street receiving a smaller portion. All parking lots can be expected to have an additional background of .3 mg/m³ (not included in the contours shown in Figures 64 and 65). It is clear from

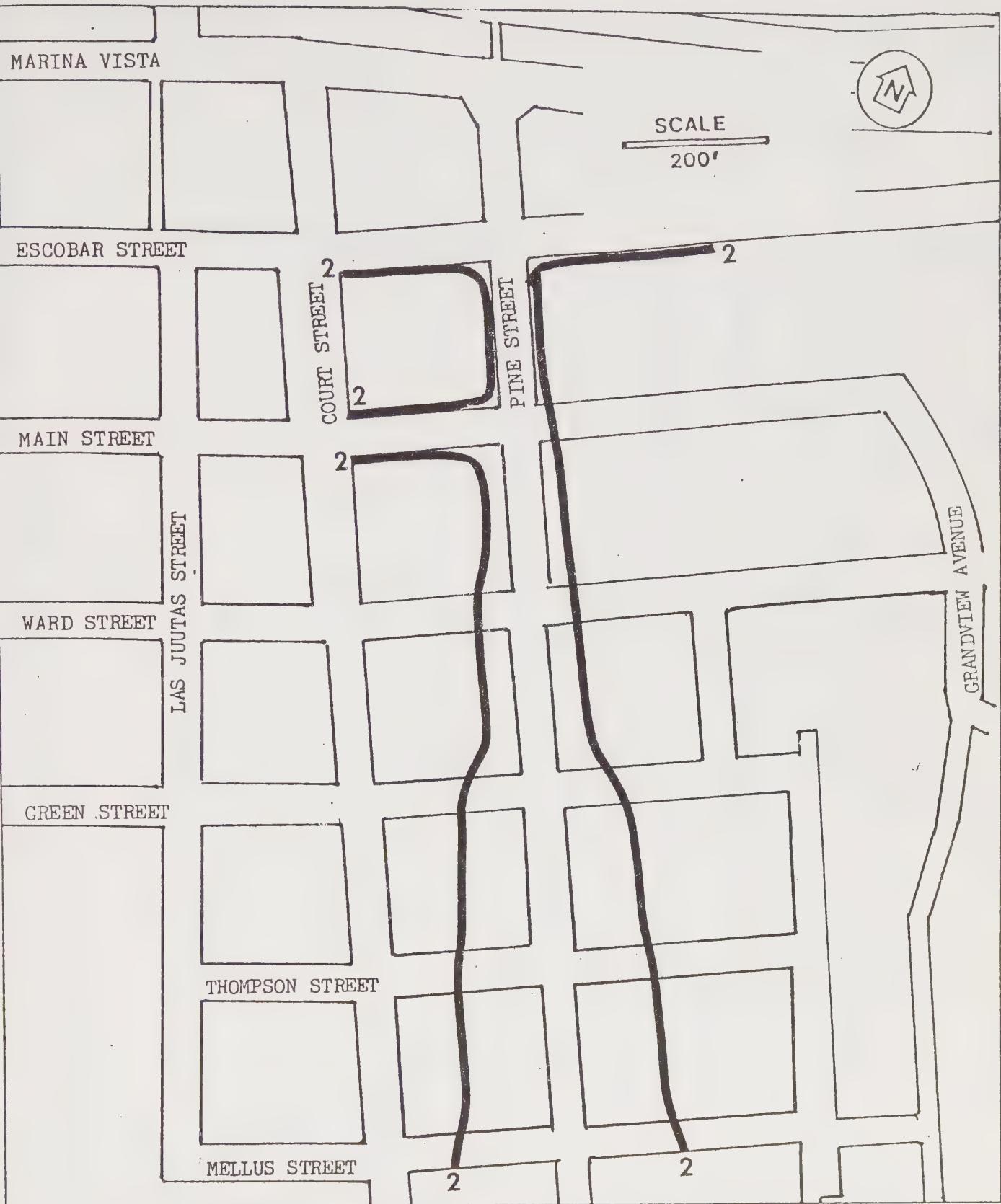


Figure 64. 1980 Eight Hour Maximum CO for the No Project Alternative (mg/m^3)

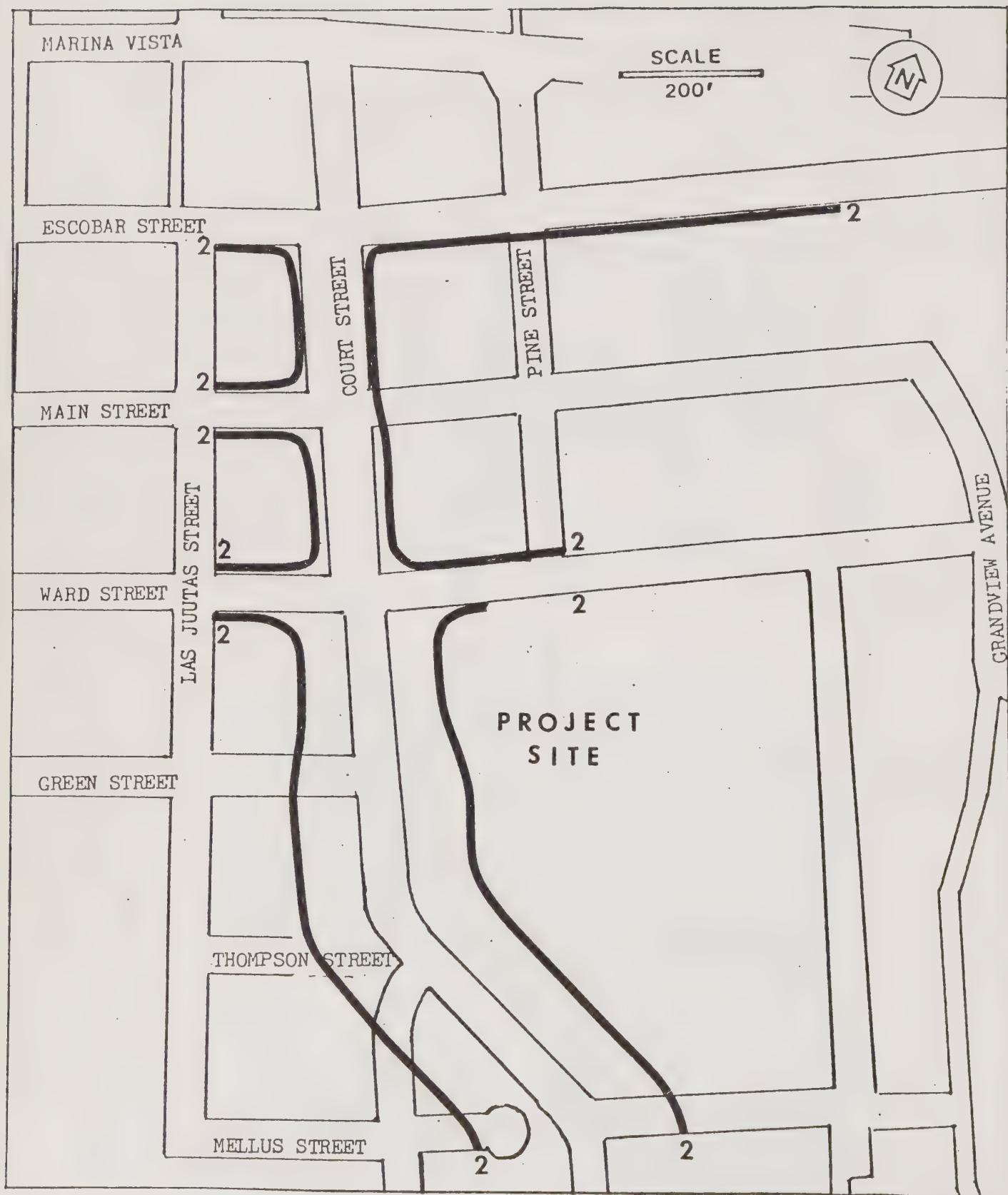


Figure 65. 1980 Eight Hour Maximum CO Concentrations for Alternative E (mg/m^3)

the modelled concentrations, that the Federal and State carbon monoxide standards will not be exceeded in the project area for any of the alternatives.

Other Pollutants

For hydrocarbons, oxides of nitrogens, and total particulate, total vehicle emissions in the downtown area were calculated for existing conditions and for each of the alternatives (see Table 41). Emissions of these pollutants will decrease by 1980 whether or not the project is implemented, although the No Project Alternative will result in slightly lower emissions than any of the build alternatives. Although vehicle emissions of hydrocarbons are expected to decrease significantly by 1980, the hydrocarbon standard will probably continue to be exceeded at that time, since it is currently exceeded by such a wide margin throughout the Bay Area; also, as discussed previously, in Contra Costa County only 38 percent of the hydrocarbons were from motor vehicles, the remainder arising from industrial stationary sources. Since the NO_2 standard is probably not exceeded presently in Martinez (see discussion of existing air quality), it is unlikely that it will be exceeded in 1980 or thereafter based upon the values of traffic volume increase expected. Predictions of oxidant require complex modelling treatment because of the sequence of chemical reactions which form this pollutant. While the trend in the Bay Area is toward fewer exceedences of the oxidant standard, it is unlikely that by 1980, the standard will be met independent of the decision made on this project.

Carbon monoxide, hydrocarbons and particulate emitted from heating and cooling of the facility will be negligible. Oxides of nitrogen emissions, however, may be significant depending upon the temperature of combustion. Since NO_x emissions vary greatly with combustion temperature (increase as temperature increases), it will be important to examine this factor at the time the heating and cooling equipment is chosen. Manufacturers can supply emissions data for their equipment.

b. Construction Impacts

A temporary air quality impact will occur during construction. In addition to emissions from traffic to and from the construction site during the earthmoving operations and paving, two other sources of emissions will be present.

Table 41. Projected Daily Vehicle Emissions (Kg) In The Area Enclosed by Court Street on the West, Marina Vista on the North, Willow Street on the East and Mellus Street on the South. Hydrocarbon Values Include Exhaust, Evaporative and Crankcase Emissions.

	Total Hydrocarbons	Oxides of Nitrogen	Particulates
Existing (1976)	23.8	14.0	1.81
No Project (1980)	15.8	11.2	1.48
Alternative A (1980)	16.0	11.3	1.50
Alternative B (1980)	16.1	11.4	1.52
Alternative C (1980)	16.5	11.7	1.55
Alternative D (1980)	16.2	11.4	1.52
Alternative E (1980)	16.6	11.7	1.56
Alternative E-1 (1980)	16.5	11.7	1.55

First, heavy diesel equipment emit NO_x and CO as well as particulates, HC and SO_2 . Table 42 lists typical construction equipment emission rates, in grams per liter of diesel fuel. A single machine of this type may use from 8 to 19 liters (from 2 to 5 gallons) of fuel per hour. The second, and even more significant air quality impact is the generation of ambient particulate matter in the earthmoving and paving process. While it is not possible to quantify this effect it almost certainly will lead to local violation of the ambient air quality standard for particulates. For instance, at BAAAPCD station in San Jose which recorded a median average daily particulate concentration of 88 $\mu g/m^3$, this concentration rose to a maximum of 208 $\mu g/m^3$ during a period of nearby construction in 1971; a similar experience was noted in Pittsburg in 1973.

Table 42. Construction Equipment Emissions

Pollutant	Emissions grams/liter	Emissions, average grams per 10 vehicle/hour
Particulate	3.6	500
SO_2	3.7	500
CO	12.0	1600
HC	4.8	650
NO_x	24.0	3250

Noise

Future CNEL noise contours were developed for Alternative E (the proposed project) and the No Project Alternative, based upon the expected traffic conditions associated with each alternative, for the year 1980. These contours are presented in Figures 66 and 67. In addition, the relative traffic noise impacts of the other alternatives were also considered.

a. Traffic Noise

Based upon the 1980 traffic volumes supplied by JHK & Associates (Chapter 16 of the Background Report), traffic noise levels for the No Project Alternative would be only slightly increased over existing levels. Additionally, noise levels between the No Project Alternative and Alternatives A and B would be indistinguishable. Alternative C would also result in similar noise levels, except for slightly increased traffic and noise levels along Pine Street between Mellus and Ward Streets, and significantly increased traffic and noise levels along Ward Street west of Pine Street, with a correspondingly significant decrease in traffic and noise along Green Street in the same area, due to the closure of Green Street between Pine and Court Streets.

The traffic patterns and noise levels associated with Alternatives D and E are considerably different from the other alternatives, due to the diversion of Pine Street traffic south of Mellus Street to Court Street north of Thompson Street. As a result, noise levels along Court Street in this area would be significantly higher than is the case for the No Project and other alternatives, while the Pine Street noise levels north of the Pine Street diversion would be noticeably lower. The major area where Alternative E differs from Alternative D is the increased traffic and noise levels on Ward Street (west of Pine Street), with a corresponding decrease in traffic and noise levels on Green Street, due to the additional closure of Green Street east of Pine Street in Alternative E.

Comparing the No Project Alternative with specific changes in the CNEL traffic noise levels of Alternative E, increases of 2 dBA on Ward Street west of the project area, and 7 dBA on Court Street north of the Pine Street diversion, would occur. The increase on Ward Street constitutes only a minor increase in noise levels, but the increase on Court Street would be a significant impact, especially for the

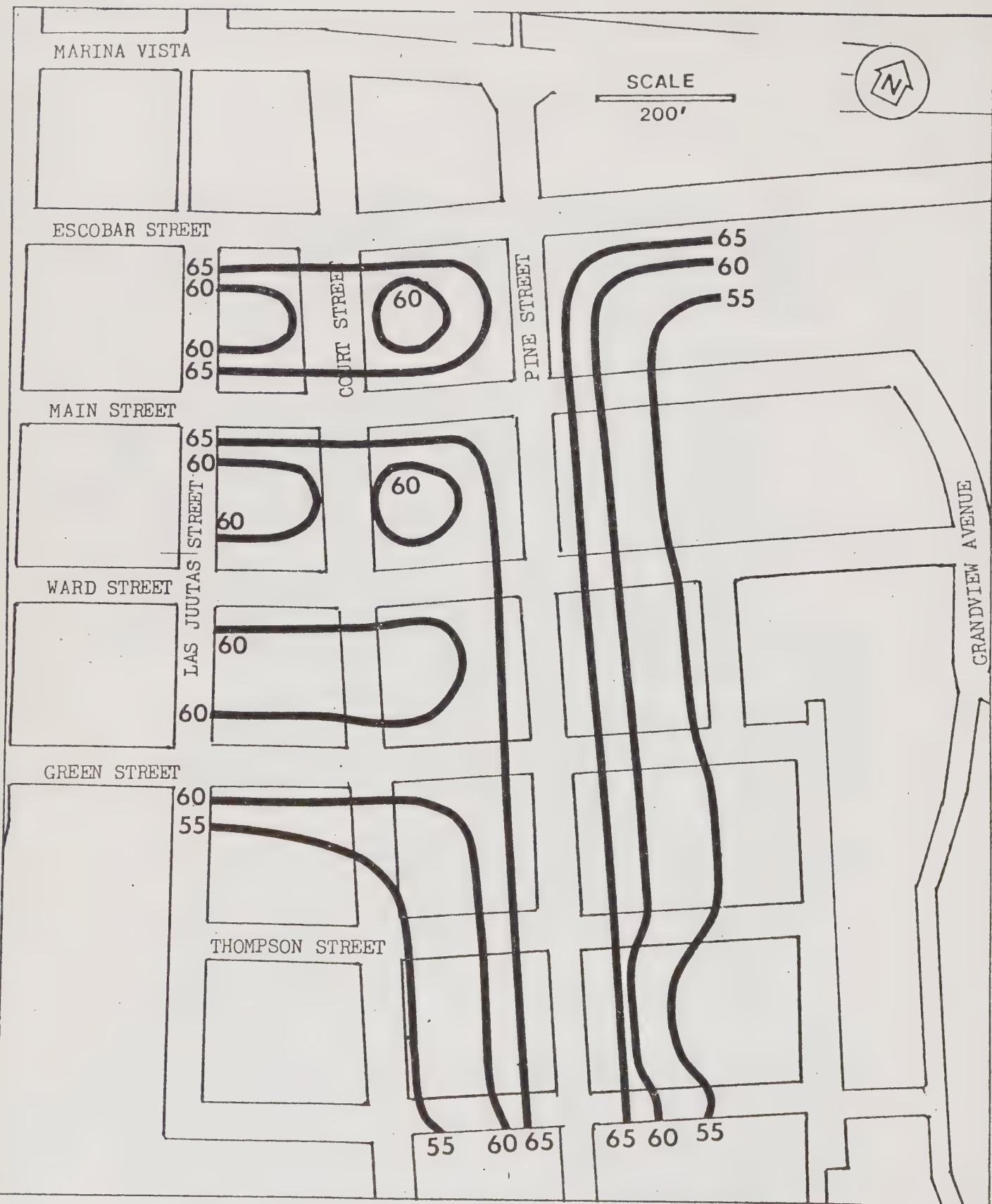


Figure 66. 1980 CNEL Traffic Noise Contours for the No Project Alternative

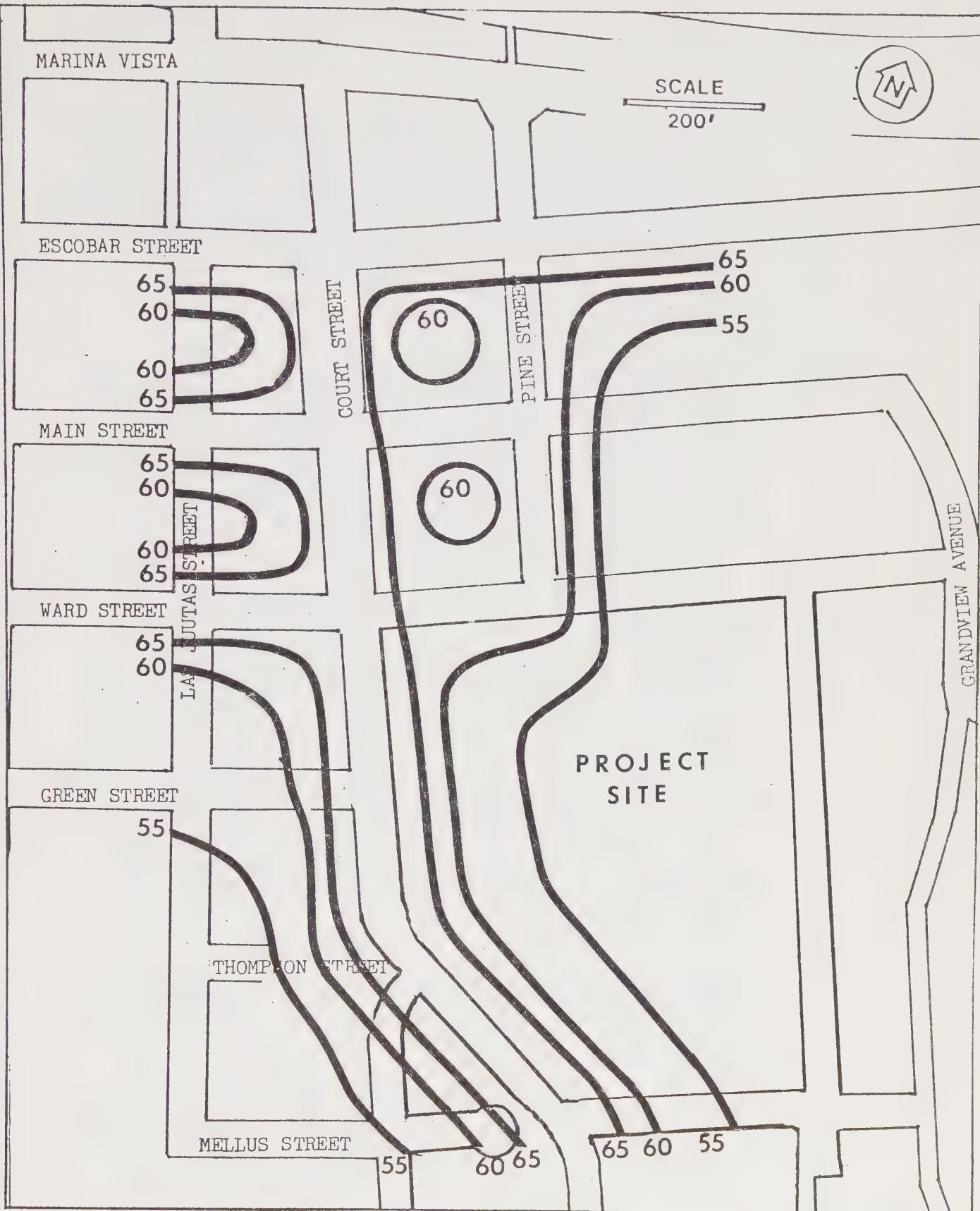


Figure 67. 1980 CNEL Traffic Noise Contours for Alternative E

residences on Court Street between Ward and Mellus Streets. In this area, noise levels would rise to near the existing noise levels along Pine Street, south of the project area. Significant decreases in CNEL noise levels of 6 dBA on Pine Street north of the project site, and 5 dBA on Green Street west of Court Street, would also occur with Alternative E, compared with the No Project Alternative.

b. Construction Noise

Construction operations of facilities such as the Detention Facility generally proceed in five phases: ground clearing, excavation, foundations, erection and finishing. These phases with their associated noise levels last varying lengths of time, due to the differing amounts of work required. Table 43 presents the range of average noise levels on the construction site which would be expected for each of these five phases, during construction periods each day. The upper end of the range assumes all customary equipment is present at the site while the lower end of the range assumes only the minimum required equipment is present at the site (EPA 1971). Table 43 also presents the average noise levels which are expected to occur at the nearest residences to the construction site, for each Alternative, during each of these phases. Table 44 presents the noisiest equipment types which will likely be operating at the construction site during each phase of construction (EPA 1971). Noise levels at 15 meters (50 feet) from the equipment plus the noise levels at the nearest residences for each Alternative are included. It should be noted that the noise levels associated with the noisy equipment in Table 44 are higher than the average noise levels given in Table 43. This follows because the noisy equipment will be operating only part of the time, while at other times lower noise levels will be emanating from the construction activities.

The construction noise levels for all of the alternatives presented in Tables 43 and 44 represent highly annoying outdoor noise levels, for pedestrians in the vicinity of the project site, as well as at the nearest residences and offices to the site. These are worst case noise levels, however, applicable when the construction operations are proceeding at their closest location relative to the nearby pedestrians or residents. (The nearest residences to the construction activity vary, depending on the particular alternative and the current phase of construction. For

Table 43

Typical Average Construction Noise Levels Expected on the Construction Site, and at Nearest Residences for Each Alternative, During Different Phases of Construction (dBA)

Construction Phase	On Construction Site	AT NEAREST RESIDENCES FOR ALTERNATIVE:									
		A		B		C		D		E	
		I	II	I	II	I	II	I	II	I	II
Ground Clearing		84	84	78	78	78	78	78	78	78	78
Excavation		89	79	78	68	75	65	79	69	77	67
Foundations		78	78	67	67	64	64	68	68	66	66
Erection		86	76	80	70	80	70	80	70	80	70
Finishing		89	76	78	65	75	62	79	66	77	64
										78	65

I. All pertinent equipment present at construction site.

II. Minimum required equipment present at site.

Table 44

Noise Levels from the Noisiest Equipment Operating During Each Phase of Construction, at 15 meters (50 feet) from the Equipment, and at the Nearest Residences for Each Alternative (dBA).

Phase	Type of Equipment	At 15 meters (50 feet)	FOR ALTERNATIVE:				
			AT NEAREST	RESIDENCES	FOR	ALTERNATIVE:	E
A	B	C	D	E			
Ground Clearing	Truck Scraper	91 88	85 82	85 82	85 82	85 82	85 82
Excavation	Rock Drill Truck	98 91	87 80	84 77	88 81	86 79	87 80
Foundations	Jack Hammer Concrete Mixer	88 85	77 74	74 71	78 75	76 73	77 74
Erection	Paver Derrick Crane	89 88	83 77	83 74	83 78	83 76	83 77
Finishing	Rock Drill Truck	98 91	87 80	84 77	88 81	86 79	87 80

example, for Alternative E the closest residences would be located on Mellus Street during the ground clearing phase, but during most of the other phases, they would be located on Court Street.) At these residences indoor noise levels, under windows closed conditions, will average approximately 24 dBA lower than the levels predicted here (EPA, 1974). Additionally, indoor and outdoor noise levels will be somewhat lower when the construction equipment is operating at more distant locations on the project site.

Not included in the above discussion is the noise resulting from pile drivers, since their use is not expected at the project site. However, if pile drivers are needed, they would produce 101 dBA at 15 meters (50 feet), the highest noise levels of all equipment used during the construction operations. Additionally, their repetitive impact character would increase their annoyance to nearby residents and pedestrians.

12. Historical and Archaeological Considerations

Excavation of 87 test holes using power auger, hand auger, back hoe, and shovel within the 7.5 acre, six block site of the proposed Contra Costa County Criminal Justice Detention Facility in Martinez, California, yielded no prehistoric archaeological remains and only sporadic historic materials. It can be reasonably concluded that the parcel contained no significant archaeological or historic features.

The proposed project will not have any impact upon historic resources. Sites identified by the County, State or Federal lists are not affected by the proposed action.

13. Energy

a. Calculation of Long-term Energy Commitments

The long-term energy commitments include principally the fuel and electricity consumed in building operation and maintenance and the fuel consumed in transportation related to the operation of the facility. The impacts are related to the net difference between existing energy consumption and future energy consumption resulting from operation of the project as well as any changes in the types of fuel utilized.

i. Building Operation

(a) Existing Consumption at the Proposed Site. The proposed site consists of portions of six city blocks in Martinez bounded by Ward Street, Willow Street, Court Street and Mellus Street. The existing uses to be discontinued include several parking lots, 13 residential units, 15,148 square feet of office space, and 13 street lights. The energy audit is summarized in Table 45. The peak existing electrical demand is estimated at 68 KVA. (Sturgeon, J. J., Richmond Office, Pacific Gas and Electric Company)

(b) Energy Consumption of the Existing Jail Building. The existing Main Jail consists of 14,476 square feet of floor space of which approximately 90 percent is living space. The average inmate population is 155 with a maximum of 162. Space and water heating is by steam which originates in a gas-fired boiler located in the Finance Building across Main Street. Utility records covering the past four years were obtained from PG&E and were averaged to obtain estimates of yearly consumption. Since gas usage is not submetered for the jail, the overall consumption of the three adjacent buildings was pro-rated by area with the jail allocated 13.8 percent of the total usage. The totals are summarized in Table 46. The peak electrical demand of the existing jail was 47 KVA recorded in October, 1976. (Ibid.)

(c) Projected Consumption at the Proposed Building. A discussion of potential energy sources and projected energy consumption by month has been provided by Donald Bentley and Associates, consulting engineers (subcontractors to Kaplan and McLaughlin, project architects). The discussion concludes that the principal energy sources will be fuel oil for space heating, an unspecified amount of gas for cooking, primarily solar energy for water heating, and

Table 45

**Estimated Existing Yearly Energy Consumption
Proposed Site for Contra Costa County
Criminal Justice Facility**

Use	Electricity/Year KWH (Therms)	Gas/Year Therms	Total/Year Therms
Offices ⁵	246,155 (8,399)	8,364	16,763
Residences ⁶	95,584 (3,262)	17,936	21,198
Street lights ⁷	<u>35,815 (1,222)</u>	<u>-</u>	<u>1,222</u>
	377,554 (12,883)	26,300	39,183

Table 46

**Estimated Yearly Energy Consumption
Existing Main Jail**

Use	Electricity/Year KWH (Therms)	Gas/Year Therms	Total/Year Therms
Building Operations ⁹	308,772 (10,535)	6,189	16,724

electricity for the remainder of the energy requirements. The totals are summarized in Table 47. The electrical connected load is estimated at 19000 KVA with maximum demand between 1000 and 1200 KVA.

ii. Transportation

(a) County-owned Vehicles. Table 48 compares the estimated energy consumption resulting from County-owned vehicle operations related to both the existing and proposed detention facilities.

Table 47

Estimated Yearly Energy Consumption
Proposed Contra Costa County
Criminal Justice Facility

Use	Electricity/Year KWH (Therms)	Gas/Year Therms	Oil/Year Gallons (Therms)	Total/Year Therms
Building	6,581,425		131,335	
Operations ²	(224,558)	Unknown	(183,869)	355,893

(b) Other Vehicles. For the proposed project there will also be increases in transportation fuel use related to individuals who are employed in the new building or are visiting or providing services. Table 49 is an estimate of such energy uses for the existing site, but sufficient data is not now available to make projections for the new project or to derive a net difference.

Table 48

Estimated Transportation Fuel
for County-owned Vehicles

Use	Total Therms
Proposed Detention Facility	16,852
Existing Jail	6,820
Net Difference	10,032

Table 49

Estimated Existing Transportation Energy Summary
Proposed Site for Contra Costa County
Criminal Justice Facility

Use	Quantity	Total Miles in POV*	Total Fuel/Year (Therms) ¹
Professional Offices ²	15,148 sq. ft.	177,232	14,910
Residences ³	13 each	128,115	10,778
TOTAL			25,688

*Personally owned vehicle.

¹One gallon of gasoline = 126,190 BTU

²Assume 450 trips per week per 10,000 square feet of floor area (Source: CALTRANS, 10th Progress Report Trip End Generation, July 1975) at five miles per gallon of gasoline.

³Assume three trips per day per dwelling unit at nine miles per trip and 15 miles per gallon of gasoline.

iii. Water Supply

Both the existing and proposed facilities are served by the Martinez water system which in turn purchases water from the Contra Costa County Water District. With electricity used for pumping and treatment of 2,250 KWH per million gallons (Contra Costa County Planning Department, Energy Use and Conservation in Contra Costa County, p. 102), and an estimate that the project will consume at least 10 million gallons of water annually (Milne, Murray, Residential Water Conservation, (Davis: University of California, California Water Resources Center, Report No. 35), March 1976, p. 19. The average amount of water used daily indoors (70 gallons) times the number of inmates (383) = 26,810 gallons per day or 9,785,650 gallons per year. The resultant yearly electrical requirement for water supply would be approximately 22,500 KWH.

iv. Sewage Treatment

Sewage treatment for the proposed facility is provided by the Central Contra Costa Sanitary District treatment plant at the end of Imhoff Drive near Martinez.

The national average energy use for primary and secondary sewage treatment is 880 KWH per million gallons of wastewater treated.

The Central Contra Costa County Sanitary District has been recovering methane gas for 20 years in a sufficient quantity to provide a heat source for the plant. It is anticipated that the existing plant will be replaced by a facility for secondary treatment by 1980. Secondary treatment will require at least twice as much energy per volume of material processed. Until 1980 or 1982 the new plant will use natural gas or diesel fuel. The second phase construction plant will include solid waste and sewage sludge heat recovery for steam generators. The value of the electricity thus generated is estimated to be two to three million dollars annually, and may be in excess of that needed to run the plant. (One gallon of gasoline = 126,190 BTU.)

v. Solid Waste

Solid waste which is now being disposed of by the Martinez Sanitary Service in the ACME Landfill will likely increase as a result of the proposed facility.

Energy is used in solid waste disposal, primarily for transportation and on-site vehicles. Nationwide solid waste collection uses about 3.6 percent of all highway use of diesel fuel and approximately 1.6 percent of all truck gasoline used. Figures for Contra Costa County are not available and therefore no estimate has been made for the proposed project.

b. Energy-related Impacts of Project Construction

The initial construction of the project will result in an estimated non-specific energy expenditure of 4.07×10^6 therms, 99.6 percent of which could be assumed as non-renewable fuel resources if this consumption is proportional to the national average. (Joint Committee on Atomic Energy. Understanding the "National Energy Dilemma." (Washington, D.C.: U. S. Government Printing Office, 1973.) Charts A, C and E.)

c. Peak Load Increases in Relationship to PG&E Production

The long-term electrical energy requirement is composed of two significant factors: total operational requirement per time unit in kilowatt hours (KWH) and peak load in kilowatts or KVA (kilovolt amperes). (The net additional peak load imposed by the proposed project on the PG&E electrical supply system is estimated to be 1,085 KVA. See Table 50.)

PG&E has a wide mix of electric generation resources which include hydroelectric, nuclear, geothermal and fossil fuel-fired generating plants. The average construction cost range of expansions varies from \$140.00 to \$500.00 per kilowatt. To cover the additional peak load requirement of the proposed project the final cost would be from \$151,900 to \$544,500 and result in an estimated initial non-specific energy consumption of from 54,684 to 196,020 therms assuming the costs are in 1975 dollars.

i. The Potential for Electrical Service Interruptions. Currently, PG&E can normally supply the estimated average and peak demand loads for the proposed project. However, a combination of short duration factors including, for example, hydroelectric water shortages, prolonged summer hot spells with concommittant heavy air conditioner use, and extensive agricultural water pumping, may cause loads that exceed PG&E system capacity.

PG&E does not hold itself liable for interruptions to service or insufficiency of supply that are due to causes beyond its control.

Prison facilities are included as priority one "Essential and Protected Customer Uses," under California Public Utilities Commission (CPUC) Decision No. 86081 in Case No. 9884 establishing curtailment policies for electrical service. However, no specific provisions exist for implementation of the priority plan. What this apparently means is that the Detention Facility will receive electrical power while many other users may not, which may include residential users. In its decision the Commission stated, "The Priority Plan adopted herein should only

Table 50
Summary of Energy Impacts

	Electricity KWH	Fuel Therms	Primary Energy Total (Therms)
INITIAL ENERGY INPUTS			
<u>Construction Energy Inputs</u>			$+4.07 \times 10^6$
LONG-TERM COMMITMENTS			
<u>Building Operation</u>			
New Project	+6,581,425	+183,869 ¹	
Less Existing Site	-246,155	-26,300 ²	
Less Existing Jail	-308,772	-6,189 ²	
Net Difference	+6,026,498	+151,380	No estimate
<u>Operations Transportation</u>			
New Project		+16,852	
Less Existing Jail	-6,820		
Net Difference		+10,032	No estimate
<u>Peak Electrical Demand</u>			
New Project	+1,200 KVA (kilovolt amperes)		
Less Existing Site	-68 KVA		
Less Existing Jail	-47 KVA		
Net Difference	+1,085 KVA		

¹ Estimate for fuel oil only. Natural gas will be used for cooking and operating dryers in the laundry, but no estimate is available at this time.

² Only natural gas is used in existing buildings.

be implemented as an emergency measure should voluntary conservation not achieve the necessary savings of energy." Electric Rule No. 14, "Shortages of Supply and Interruption of Delivery," outlines PG&E's position on this subject. Actually, the company anticipates multiple courses of action during a forecasted electric supply shortage. In sequence, supply shortages would normally entail the following actions:

First Phase: PG&E will curtail customers who have service contracts calling for load reductions in emergencies.

Second Phase: PG&E will request voluntary load reductions by all customers.

Third Phase: The California Public Utilities Commission is to order mandatory load reductions by customers in accord with the electric priorities of service criteria.

Fourth Phase: If all the above phases should fail to resolve the supply shortage problem, PG&E will have no choice but to implement sequential circuit interruptions (temporary service interruptions to customers). PG&E has no facilities to protect priorities of use or customers during this type of catastrophic procedure.

ii. The Availability of Electrical Power. The proposed project will require an estimated net additional electrical energy supply of 6,026,498 kilowatt hours per year indefinitely. PG&E does not foresee a general shortage of electricity in the next few years, provided steps are not taken or unforeseen incidents do not occur, beyond the control of the company which could prevent it from meeting the requirements of its customers. Such incidents might, for example, include a prolonged oil embargo, federal or state regulatory actions affecting energy supply, inordinate delays in the PG&E construction program and an inability to obtain adequate and timely rate relief which would hamper the utilities' ability to obtain necessary financing. The recent CPUC order (2/1/77) and PG&E's call for voluntary reductions to save energy are examples of the types of actions which may continue into the future. These activities will have some impact on the proposed project.

iii. The Environmental Impacts of Electrical Generation. Typically, electrical energy has a relatively minor environmental impact at the point of use. However, the environmental effects of its initial generation, usually at a remote location, are well documented. (Refer to Background Chapter 15.)

In spite of many differences, fossil fueled and nuclear fueled electric power plants have at least four basic aspects in common.

Both classes of fuel are at present used almost entirely in steam electric-generation plants, and for this reason both create somewhat similar problems of thermal pollution. The fossil plants discharge some of their waste heat into the air, while all the waste heat from nuclear plants goes into the water. In addition, both pollute water with chemical additives, and at times great amounts of land are used in transmitting power from the plant to the consumer.

d. The Impact of Long-term Fossil Fuel Commitment for Water and Space Heating

Estimates of project impacts indicate a net increase of 183,869 therms (131,335 gallons) of fuel oil and a net decrease of 32,489 therms of natural gas to be consumed indefinitely on an annual basis. It is assumed that fuel oil will be the energy source for space heating and not natural gas.

Compared to fuel oil, emissions from the combustion of natural gas have a relatively insignificant adverse impact on air quality as indicated by the exemptions of certain amounts of residential and commercial natural gas heating from permit requirements of the Bay Area Air Pollution Control District. (Bay Area Air Pollution Control District, Regulation 2 (15th Revision: San Francisco, 1976). Section 1516 (A2).)

No amount of emissions from oil-fired heating are exempt after 19 December 1976 in industrial applications, and the addition of these emissions is likely to have a noticeable and adverse impact on air quality in the area of the project. However, commercial use are allowed to burn up to 10×10^6 BTU of fuel oil of less than $\frac{1}{2}\%$ sulfur by weight (BAAPCD). Details of these impacts are dealt with in detail in the Air Quality and Utilities sections of this report.

The proposed fuel oil utilization in place of the existing natural gas use carries a greater possibility of damage to water quality, wildlife, vegetation, and air quality in event of spillage due to transportation accidents.

The proposed use of fuel oil will, however, free approximately 32,489 therms of natural gas for other uses at a time when shortages are becoming critical. The Federal Energy Administration (FEA) predicts, for example, a six percent shortage of natural gas for commercial use this winter (1976-77), and PG&E has stated that it may have to curtail natural gas supplies to some residential customers by 1986 if it does not get new supply sources.

e. The Impact of Long-term Commitments for Transportation Fuels

Some of the major environmental effects of increased transportation fuel use related to the proposed project will be properly dealt with in the Traffic and Air Quality sections of the EIR. Vehicle fuels such as gasoline and diesel oil are non-renewable fossil fuel resources and result in many of the impacts of fossil fuel combustion including supply and economics.

f. The Impact of Long-term Commitments for Water Supply, Sewage Treatment and Solid Waste Disposal

The Milne Report (Milne, Murray, Residential Water Conservation, p. 11.) states that the fastest growing cost item in the nation's water budget is the energy needed to pump water from one place to another. In fact, some experts believe that within ten years energy shortages alone will force the institution of strict water conservation programs in many parts of the nation. Less water consumed means less sewage produced and more energy saved in the treatment process.

Today, trash and garbage are resources. (Contra Costa County Planning Department, Energy Use and Conservation in Contra Costa County, p. 103-104.) These wastes are estimated to have a high heating value of 4,350 BTU per pound (8,700,000 BTU per ton, as compared to 8,500,000 BTU per barrel of crude oil) with an average 24 percent moisture content. Approximately 1,136 tons of solid waste are deposited daily at the ACME landfill site. The garbage and commercial-industrial wastes deposited daily at ACME have an estimated energy content of 7,099,200,000 BTU's (7,099 therms). Actual net energy recovery is not known. It is planned to burn 63 percent of this material to generate electricity for the Central Sanitary District wastewater treatment plant, a process expected to be operational by 1980. A pilot plant operation to determine the feasibility of energy recovery from the remaining 37 percent is planned.

In spite of potential energy recovery, the energy expended in the construction of processing facilities is of considerable significance as is the energy expended in transportation. Overall, conservation is a more energy-efficient strategy than the best recovery schemes (Background Report Chapter 15).

g. The Economic Impacts of Energy Conservation

Traditionally, public agencies with power of taxation, such as Contra Costa County, have attempted to minimize the construction costs of new projects with little thought to life cycle costs. Initial expenditures are generally financed out of general tax

revenues by grants or by bonds which have to be approved by an increasingly reluctant public. Two conservation and tax measures relating to energy structure appeared on the November 1976 ballot and were defeated.

Governmental agencies are just beginning to feel the effects of double digit energy inflation which has no apparent end. At least one West Contra Costa County city has eliminated a number of street lights to save on rising electrical costs. Life cycle costing techniques are now being increasingly utilized at many levels of government to analyze the microeconomic relationship of initial and long-term costs of various projects and programs. Energy conservation typically is an area that may involve increased first costs to achieve lower life cycle costs.

Indications are that energy conservation in buildings is an economically viable alternative, and will become increasingly so as energy costs rise. In terms of an energy economy, it has been estimated, for example, that every BTU required in the construction of a building is matched by another BTU during each year of its life. (American Institute of Architects, Energy and the Built Environment: A Gap in Current Strategies. (Washington, D.C.: by the author, 1964), p. 18.)

The question of whether provisions for reduced energy consumption would adversely affect the functional objectives of the project is the most difficult to answer. It may be noted in Table 51 that the proposed Contra Costa County project has a somewhat higher energy consumption per gross square foot and per inmate than similar facilities in San Diego, California, and Maricopa County, Arizona; and a somewhat lesser consumption than a similar facility in Kane County, Illinois. Differences in climate, construction, mechanical systems and usage would detract from the objectivity of the data, but overall, such comparisons are extremely useful in indicating a range of what is possible.

An analysis of energy consumption can be found in the Utilities Section of this report.

Table 51

COMPARISON OF ENERGY CONSUMPTION
FOR SIMILAR DETENTION FACILITIES

Facility	Gross Area (GSF)	Stories	No. of Inmates	Yearly Electrical		Yearly Steam BTU/GSF	Yearly Gas or Fuel Oil BTU/GSF	Yearly Chilled Water BTU/GSF	Yearly Totals BTU/ Inmate	
				KWH/GSF	BTU/GSF				BTU/GSF	BTU/GSF
San Diego	240,000	12	508	15.00	51,180	31,150 ¹	None	65,000	164,103	7.75×10^7
Boulder Co.	135,000	--	300	-----	-----	-----	No Information	-----	-----	-----
Chicago	180,000	26	400	-----	-----	-----	No Information	-----	-----	-----
Kane Co.	70,000	2	105	16.46	56,151	None	185,140	None	241,280	16.10×10^7
New York	--	12	600 (448 max.)	-----	-----	-----	No Information	-----	-----	-----
Maricopa Co.	106,301 (occupied)	1	448	39.01 ³	133,105 ³	None	59,250 ³	None	191,890	4.55×10^7
Bureau of Prisons (Average)	--	--	25,080	-----	-----	-----	-----	-----	-----	18.98×10^7
Contra Costa Co. (Existing)	14,476	3	151	21.33	72,778	None	42,753	None	115,531	1.11×10^7
Contra Costa Co. (Proposed)	180,000		383	36.56	124,743	None	102,149	None	226,892	10.66×10^7
Contra Costa Co. Juvenile Hall Complex	160,241	3	196	12.69	117,595	None	None	None	146,820	12.00×10^7
Contra Costa Co. Boys' Ranch	31,194	1	51	12.17	93,393	None	None	None	134,923	8.24×10^7

Notes:¹ Assumes 65 per cent efficiency for delivered energy.² Assumes 60 per cent efficiency for delivered energy.³ Estimated from seven months records.

B. Any Adverse Environmental Effects Which Cannot Be Avoided if This Proposal is Implemented

1. Views from some areas of Martinez will be at least partially blocked. (Sections 1, 2, and 9)
2. The Civic Center "cityscape" will be extended more than 2 blocks south of its existing location. (Sections 1, 2, and 9)
3. There will be an increase in the uncoordinated variety of architectural building styles in the Civic Center. (Section 1)
4. Two doctors' offices will be removed, which will probably inconvenience some of their patients. (Sections 2 and 9)
5. Street closures will create inconvenience and, possibly, hardship for some persons. (Section 4)
6. Traffic congestion and inconvenience will be caused by the required utility relocation. (Section 3)
7. Access to some residential areas will be reduced because of street closures. (Section 2 and 4)
8. A large amount (approximately 1/3) of the existing County Civic Center will be committed to development, leaving little space for future government expansion. (Section 5)
9. Utility relocation costs will primarily be the responsibility of the County. (Sections 3 and 10)
10. The project will cost approximately \$20 million dollars to complete. (Sections 1 and 10)
11. Higher utility costs will be unavoidable (sewerage, water, gas, fuel oil, electricity, etc.). (Sections 3 and 10)
12. The Detention Facility will cost more to operate and maintain, and it appears that more public revenues will be necessary. (Section 10)
13. Relocating County functions currently using structures on the site will be an unavoidable expense, especially if other County-owned quarters cannot be obtained. (Section 10)
14. Persons forced to relocate may be required to pay more rent for replacement housing or office space. (Section 10)

15. Site preparation and facility construction will require consumption of non-renewable resources, most notably, fossil fuels such as gasoline and diesel fuel. (Fossil or nuclear fuels are used to generate electricity; these are also non-renewable energy sources). (Section 13)
16. Inconvenience for facility visitors, primarily because of the lack of extensive public transportation, will be essentially unavoidable. (Section 9)
17. The aversion to living near a jail and its occupants by some nearby residents is unavoidable. (Section 9)
18. Certain traffic congestion, noise and air quality impacts can only be partially mitigated; some resultant impact is unavoidable. (Sections 4 and 11)
19. The required removal of the blackwood acacia in block 3 for the Pine Street diversion will be an adverse and unavoidable impact. (Section 8)

C. Mitigation Measures Proposed to Minimize the Impact

The following discussion puts forth mitigation measures for impacts identified as resulting from the proposed project, if it is approved. Certain of these measures will eliminate or reduce the significant impacts which are itemized in the preceding section and in the Summary at the front of this document.

1. Physical Impact

a. Reduce visual impact of large expanse of parking facilities:

Consider on-site parking to a maximum of 450 cars or provide parking structures. Small parks, landscaped areas, pedestrian ways, and retention of existing structures along the Willow Street boundary would be a desirable alternative to parking lots.

b. Visual buffer for East Hillside viewshed:

Provide a visual buffer between the Detention Facility and the East Hillside Neighborhood through landscaping and/or the retention of existing buildings. Retain existing structures and homeowner landscaping along the Willow Street site boundary between Ward and Mellus Streets and supplement with landscaping to screen views of Facility and parking areas. Especially important is retention of the residential structure now used as a County office at the corner of Green and Willow Street. This house has architectural qualities worth preserving, and effectively functions as a partial buffer for the East Hillside viewshed.

c. Visually integrate rather than separate the Detention Facility site and the surrounding area. For example, retain the post office in its present location to provide a visual link in building scale and style between the Martinez downtown and the Detention Facility site.

d. Recover the sequential effect of the approach lost by blocking of the view toward the Civic Center. Landscaping along Pine Street diversion should emphasize continuity between Pine Street approach from the south, and Court Street. A double line of trees on the facility side of the Pine Street diversion would serve to buffer the visual impact of the delivery entrance, loading dock, and parking area, and would redirect the eye along Pine Street to Court Street. Under-story plantings in conjunction with large-crowned trees would further serve to screen the building.

e. Reinforce the sequential effect of the Pine Street approach, and minimize views of the Detention Facility structure from South viewshed.

Remaining half-block southwest of the site between Thompson, Mellus, and the Pine Street diversion now proposed as parking area would better serve as a small park. If necessary for parking, the area should be landscaped to be compatible with Pine Street approach.

- f. Reduce visual intrusion of the site on viewshed areas and on viewpoints from surrounding areas:

Lighting at night should be of a minimum intensity and frequency necessary for security.

- g. De-emphasize the vertical height of the structure, while allowing inmates greater access to windows.

Consider horizontal fenestration rather than vertical fenestration. The latter emphasizes the verticality of the structure from off-site, and much of the window space is not accessible to inmates. Horizontal fenestration may also aid in reducing behavior of inmates offensive to passers-by.

- h. Minimize visual intrusion on the East Hillside viewshed:

Rooftop appurtenances should be designed to be as visually unobtrusive as possible.

Solar panels and mechanical housing will be clearly seen from some parts of the East Hillside viewshed, and should be of non-reflective materials and colors which blend with the building.

- i. Maintain compatibility of the structure with existing Civic Center buildings:

Utilize the grey color of the concrete outside walls of the Facility, or if concrete is color-treated, a color should be selected which will harmonize with existing Civic Center buildings.

2. Existing Use and Surrounding Area

A number of mitigation measures to decrease the impacts on both the Civic Center and surrounding area land uses have already been accounted for in the proposed Detention Facility project. These include:

- a. The structure is to be located at the lower elevation, southwestern corner, of the Civic Center area to minimize effects of building height on views from the East Hillside residential area;

- b. The structure will be located away from streets which front primarily residential uses so that a spatial separation will serve as a buffer to reduce noise and minimize the visual effects;
- c. The Detention Facility building has been designed to limit visibility of its operation from surrounding areas including the enclosure of the intake area sally port and of the roof tops and outside exercise areas;
- d. The Detention Facility site has included landscaping and location of parking lot entrances/exit to buffer the adjoining residential areas at the east and south from the Civic Center activity and to increase compatibility with the adjoining areas;
- e. The Detention Facility capacity has been limited for several reasons; this has the effect of reducing the size of the proposed structure.

In addition to the above measures which are built into the project design, the County, in the future, should cooperate with the City of Martinez on land use planning and controls in the areas adjoining the Civic Center to protect them from detrimental changes.

3. Utilities and Community Facilities

a. Sewerage

- 1. The County will improve the neighborhood sewer system in the area of the Detention Facility.
 - a) A new 8" diameter trunk line will be installed on Willow Street between Thompson and Mellus Streets. This will provide the neighborhood east of Willow Street with a properly engineered sewer line of adequate capacity (McCoy, Central Contra Costa Sanitary District). Most future flow on Willow Street will be directed southerly toward Mellus Street. A small portion (north of Green) will flow northerly toward Ward Street.
 - b) A new 12" diameter trunk line will be installed from the intersection of Mellus and Pine Streets, along the proposed Pine Street diversion to the intersection of Court Street and Escobar Street. The new line will provide for better flow from southerly neighborhoods and for increased wastewater generation from the Civic Center area.

2. Central Contra Costa Sanitary District will extend the new 12" Court Street trunk line from Court and Escobar Streets to the corner of Embarcadero and North Court Streets to further improve the system. The timing of this construction is not yet known.
3. Adherence to water conservation measures, as outlined in the mitigation part of the water section of this chapter, would reduce the amount of wastewater generated from the Facility as well as monthly costs for sewer service. These measures include the use of low-flush toilets and low-flow showers and taps.

b. Water Services

1. Potential problems regarding water system capacity in the region of the proposed Facility have previously been mitigated to a large extent by the closure of the Martinez Food Cannery in 1972. The Cannery, once the system's largest consumer, used an average of 576,000 gpd in 1972. This amount is sufficient to supply the needs of Port Costa (40,000 gpd), Port Costa Brickworks (260,000 gpd), the future Martinez Waterfront (5,000 gpd), and the Detention Facility (70,000 gpd), with a remaining average excess of 200,000 gpd.
2. To save costs of water line relocation work as well as to eliminate the existing "dual system", Contra Costa County Water District should seriously consider abandoning its service to Port Costa and transferring the responsibility to Martinez Water System.
3. A variety of water conservation measures are available, which could either be built into the Facility or applied voluntarily upon occupation. The estimated consumption of 70,000 gpd could be considerably reduced if some or all of the following measures are applied:
 - a. Use flow controls on showers and water taps.
 - b. Use fixtures (showers, faucets, etc.) that incorporate push button, measured-flow control design.
 - c. Use low-flush toilets. Currently being manufactured, these will become mandatory by the state in new construction in 1978 (Simpson, EBMUD).
 - d. Promote voluntary conservation measures which generally incorporate the use of minimum amounts of water at all times.

- e. Do not plant landscaping until the current drought has ended. When landscaping is planted, use climate-adapted, drought-resistant plant species.
4. During times of poor water quality due to drought, inmates should be questioned and/or tested regarding sodium tolerance and other health problems. Those who are or may have any of these problems should be supplied with bottled water for drinking purposes. Bottled water should be supplied to all inmates if the taste of drinking water becomes intolerable.

c. Gas and Electricity

1. The specific architectural and engineering design of the proposed Detention Facility should be coordinated with proposed energy conservation measures. These measures include a solar collection system for water heating and a heat-reclaim system for reclamation of exhaust air energy (heat), as well as many other measures which are suggested in Chapter 15 of the Background Report. Energy conservation measures should not be attempted to be included after the Facility is designed. According to energy experts, it is much more advantageous to design energy conservation into a project than it is to "retrofit."
2. A fuel oil heating system should be incorporated in the design of the structure to serve as an alternative energy source to natural gas. A fuel oil generator system should also be provided to serve as a back-up energy source to electricity in areas of critical concern (for inmate and staff safety, security, etc.). However, the use of fuel oil should be kept to a minimum.
3. The Bay Area Air Pollution Control District (BAAPCD) has stated that the required type of fuel oil for use by the proposed Detention Facility would be #2 fuel oil with less than $\frac{1}{2}\%$ by weight sulphur content. This product is available from local oil refineries.

The use of this type of fuel oil, in combination with maximum equipment maintenance, would minimize pollutant emissions from fuel oil-powered systems. It should be determined whether or not the potential use of fuel oil for all space heating would require a permit from BAAPCD.

d. Telephone Service

1. Coordinate the removal and/or relocation of all telephone cables with other utilities to reduce costs and expedite the activities.
2. Although the Pine Street conduit may necessitate removal, Pacific Telephone & Telegraph Company has indicated that the cable can be retained to serve the Facility's new conduit to be installed during construction of the Facility.
3. Minimize the number of phones within the Facility to reduce monthly service charges.

e. Cable TV-Radio

1. The County could reduce minor cable service costs by reducing the number of television sets and radios within the Facility.
2. Installation of the new feeder line will be coordinated with other utility installations to reduce construction congestion.

f. Fire Protection

None are suggested. Adequate fire protection measures will be required by the Contra Costa County Consolidated Fire Protection District.

g. Solid Waste

1. Further study should be done to determine if the use of a compactor machine would be economically efficient. If it is (which is likely, as other County buildings such as the County Hospital are using them successfully), this method would minimize the number of required collections per week and associated early morning noise. Storing the waste for week-long periods would not create a health hazard.

2. The implementation of a waste recovery program within the proposed Detention Facility should be encouraged. Although commercial markets are currently limited, individual and group recycling is strongly encouraged in the adopted Solid Waste Management Plan. Recyclable materials such as metals, paper and glass could be hand-sorted, stored, and routinely delivered to a community recycling center; or adequate storage bins and associated equipment, such as a glass crusher, could be utilized to retain materials within the Facility until a marketable quantity is reached. Hand sorting could be accomplished by trustees assigned to the Facility.

h. Relocation and Abandonment

Impacts will be mitigated by coordinating all excavations, removals, and replacements of utilities.

4. Circulation and Parking

a. Circulation and Traffic

None of the circulation system revisions create access impacts that cannot be overcome by a simple rerouting of present patterns. No other mitigation measures are considered necessary.

b. Traffic Volumes

Any peak period traffic impacts could be mitigated by changing the County employee work day to a 7:30 - 4:30 schedule or having a staggered work schedule. Truck traffic impacts on the adjacent area may be minimized by designating Marina Vista as the haul route.

c. Vehicle Miles of Travel

As the project would increase the total vehicle miles traveled by less than 1%, no mitigation measures are deemed necessary.

d. Parking

Mitigation measures to alleviate the parking impacts are generally applicable to the Civic Center as a whole rather than just the project. Measures are aimed at decreasing the demand for parking, achieving more efficient use of parking and adding parking. Some would require action by the City of Martinez. These are summarized as follows:

1. Increase vehicle occupancy through continued promotion of the County's carpool program. Consider implementing a van-pool program.
2. Provide carpool incentives through preferential parking allocations.

3. Relocate certain Civic Center activities such as the Sheriff's Patrol Division, to increase supply and reduce demand for parking.
4. Reduce time limit on meter restricted parking to encourage self-regulation and turnover.
5. Vigorously enforce established time limit parking regulations.
6. Provide satellite parking during construction of the Detention Facility.
7. Purchase additional property for parking lot expansion.
8. Convert existing lots to multi-level structures.

e. Congestion and Delay

The recommended mitigation measure is to extend flexible work hours over additional County Departments. Apparently some Civic Center offices already have some form of flexible or staggered hours. Additional measures described above to reduce parking demand will also reduce peak traffic demand and resultant congestion. During construction of the Facility material handling or construction activity which infringes on the streets should be scheduled to avoid the peak traffic periods.

5. Plans, Ordinances, Policies

- a. In view of the recent history of differences over Civic Center development, agreement on the project proposal itself is a mitigation measure in the field of public policy. If it is approved by the County government and concurred with by the City of Martinez, it constitutes a new consensus for development in the area that can be used by both parties as a basis for the project to proceed and for future individual and joint planning.
- b. Formal arrangements should be made to enable the City and the County to coordinate their future efforts on studies, plans, and projects affecting the Civic Center area. These arrangements should provide for liaison by both staff and elected officials, and may include representation on one another's study committees.
- c. The County should make its current and future plans and studies dealing with the Civic Center available to the City of Martinez to provide background for the City's planning efforts.
- d. The County should update its Civic Center Master Plan to dispose of obsolete recommendations and address new needs. The plan should be based on parking, office space, and design studies. The plan (or a version of it) should be adopted as part of the County General Plan.

- e. The County should expand the coverage of its General Plan Community Facilities Element to include County facilities proposals (including future Civic Center improvements) to better relate the County's building and service plans to the overall development of the County.
- f. The County should update the land use and circulation contents in its General Plan as they pertain to Martinez and other incorporated areas to reflect current information. Even though the County uses current city plans to evaluate projects within incorporated areas, the Detention Facility project demonstrates that there are occasions when it must also evaluate public projects in an incorporated area for conformance with its own General Plan.

6. Soils and Geology

a. Strong Ground Shaking

The proposed structure should be constructed to accommodate strong earthquake shaking. The structure should be designed and constructed to present the lowest possible risk to occupants of the structure in the event of an earthquake. This is probably the level indicated in Table 39 as the maximum probable or credible earthquake and the structure should be built to a maximum of the Uniform Building Code of 1976 (Section 2312).

b. Instability of Excavation Below Shallow Ground Water Level

The most obvious means of mitigating the potential problems that might be caused by shallow ground water is to place the foundation for the planned structure at or near existing grade. The design now being contemplated includes plans to place the entire structure several feet above the level of subsurface water. However, subsidiary structures such as elevator shafts and an underground pedestrian corridor to the courthouse may possibly extend below the ground water surface. Temporary construction excavations for such structures would have to be sloped back appropriately; Woodward-Lundgren (1971) recommended sideslopes no steeper than $1\frac{1}{4}$ horizontal to 1 vertical. During construction, a system of drain sumps and pumps capable of removing an estimated maximum inflow of 300 gallons per minute might be required in a relatively large excavation (Woodward-Lundgren, 1971). The design of permanent facilities constructed below the anticipated ground level should incorporate extensive use of waterproof membranes, and should include subdrains leading to gravity outlets (Woodward-Lundgren, 1971).

c. Differential Settlement

The most recent settlement analysis (Woodward-Clyde Consultants, 1976b) indicates that the structure should be designed to accommodate differential settlement of 3/4 inch between bays and a total settlement of 3/4 inch to 1 $\frac{1}{2}$ inches. The report cited also cautions that loads in each footing should be kept as similar as practical to produce footings of a uniform size and thereby minimize differential settlement.

d. Irregular Bedrock Surface

Should a new building configuration result in substantially higher foundation loads, pile foundations may become appropriate. In that event, the variation in bedrock depth would influence, in a manner that cannot be entirely predetermined, the length of the piles used. For that reason, Woodward-Lundgren (1971) recommended that ordering of pile lengths during construction should be based on about a dozen indicator piles placed throughout the site at locations selected by the soils engineer.

7. Hydrology and Water Quality

a. Hydrology

The preferable solution to hydrologic impacts from a planning and engineering perspective would be to locate all drainage facilities for the site in Pine Street. However, because of the existing topography it is unlikely that a single drainage facility can adequately serve the proposed Detention Facility.

It has an added advantage to the City of Martinez since it would provide for drainage of portions of the East Hillside area which are currently drained by the street surfaces. Several culverts will require replacement eventually and the drainage channel may need work in the future, north of the railroad tracks. Some of this work could be coordinated with the development of the Waterfront Park and in cooperation with the City of Martinez.

The most expedient and the least costly alternative is to increase the capacity of the existing facilities beneath Green and Mellus Streets. Very little utility relocation would be required for such an installation. This alternative would require outfall into Alhambra Creek upstream of much of the downtown area. The additional water would increase the flood potential of Alhambra Creek. Therefore this alternative (all drainage to the creek) is not a good one.

Phasing drainage facility construction in Pine Street one block at a time (3 blocks: Ward to Main, Main to Escobar, Escobar to Marina Vista) will reduce the construction impact.

b. Water Quality

Construction operations should be carried out during the dry portion of the year, May through November, for activities that involve potential sediment production.

From a water quality standpoint, concrete surfaces should be favored over asphaltic surfaces for streets or parking lots, wherever economically feasible. It has been shown that asphalt surfaces have particulate matter loadings up to 80 percent higher than concrete surfaces (Sartar and Boyd, 1972).

Construction operations should be coordinated with street sweeping and catch basin cleaning operations downstream of the project area.

"No parking" regulations during certain night hours should be maintained on streets adjacent to the proposed Facility to ensure optimal effectiveness of street sweeping operations, by maintaining access close to the curb. (This would require action by the City of Martinez.)

All landscaped areas should be stabilized with native plantings to minimize the use of pesticides and erosion resistant plants.

Flat roofs and automatic or timed release mechanisms should be considered in the Facility design, to serve as ponding surfaces that would mitigate the peak storm flow.

Exposed or bare areas should be minimized during construction, and on-site sediment basins considered to mitigate sediment flows.

8. Vegetation and Wildlife Mitigation Measures

a. Retention of Significant Trees

The significant trees identified in the Impact Section and on the Major Vegetation Map, Figure 46, should be retained. The Detention Facility, as presently conceived, can be sited on the 6 block area within the Civic Center without requiring the removal of any of the significant trees. However, the Pine Street diversion will require the removal of one blackwood acacia in Block 3. The two other blackwood acacias, in Block 6, will remain.

The parking lot and landscaping surrounding the Detention Facility will be designed in such a way as to incorporate the other existing significant trees (the Canary Island date palm, #4, Block 1; the Port Orford cedar, #15, Block 2; the Siberian elm, #18, Block 3; the Deodar cedar, #9, Block 5; and the blackwood acacia, #2, in Block 6).

b. Retention of Residential Areas in the Facility Site

On the basis of biotic resources alone, vacant and/or County maintained areas should be given consideration in the site design of the proposed Detention Facility. Although some of the residential vegetation is overgrown and largely exotic, the greatest numbers and kinds of plants occur here, and wildlife value appears to be higher here than in other portions of the area surveyed.

Retention of these houses, whether they be used for offices or residences, would mitigate the loss of biotic resources and could also serve to establish a buffer between surrounding residential neighborhoods and the proposed Facility. This would mean that the parking proposed for the Thompson and Mellus area would be eliminated.

9. Social Considerations

- a. The most effective means of reducing the various negative impacts upon the environs social environment are design measures. Many such measures have been incorporated into the project; these include buffering the detention facility from the surrounding land uses by parking lots, spatial separation, the use of extensive landscaping, etc. Additionally, the facility has been designed to minimize the awareness of its presence. This will be accomplished by its low profile building design which will minimize the traditional jail appearance. Such design features will minimize impacts upon the area's "small town" character, reduce the number of views dominated by the facility, reduce the impact

of the psychological presence of the facility and its inmates, and consequently reduce the likelihood of land use changes and declines in property values. Two court rooms are included in the design so that the parading of prisoners through the streets to and from court is minimized.

- b. The likelihood of escapes will be reduced by the increased security of the new facility. Although the new facility will be larger than the existing facility, the likelihood of escape should be less than it is at present, due to the design features incorporated to ensure effective perimeter security. For instance, inclusion of courtrooms within the facility and provision for the unloading of persons from vehicles within a secure sally port area will reduce the potential for escape.

The concern that released persons will disturb persons or property in the project environs could be reduced by changing the current policy of releasing persons in Martinez. Some inmates could be transported to their home community rather than being released in Martinez.

- c. Reducing the impact that persons visiting inmates will have upon the environs, will be achieved by providing adequate parking for visitors near the facility's visiting area and providing an adequate visitor waiting area. Provision of adequate parking will alleviate the need for visitors to park in neighboring commercial and residential areas and walk through these areas to the facility. If excessive loitering and intrusion by strangers becomes a serious problem, the County could utilize security guards to reduce the problem during periods of heavy visitation.
- d. A number of mitigation measures to enhance staff security are included in project plans. Before inmates are transferred to housing modules in which they are allowed freedom of movement, they will be screened and detained in the "quick turnover" housing area until it is determined that they will not pose a high risk to the guards in the housing modules. Inmates who appear to be potential troublemakers will be detained in special housing areas where they will not be free to move outside of their rooms. In case serious problems arise within the housing modules, each deputy working in a standard housing cluster will be provided with an alarm device which will be carried on his person, and which can be readily activated to call for help.

10. Economic Considerations

- a. A means of minimizing all adverse impacts which are directly related to the cost of the project would be to begin construction as soon as possible. Given the rate of inflation in the construction industry, the sooner the facility is constructed the less it will

cost. In order to minimize delay in constructing the project, construction will be phased. This means that rather than letting bids for the entire project at one time, bids will be let in stages. Consequently, work on the initial phases (e.g., site work) can begin as soon as possible, even if the construction manager is not ready to let bids on later phases of the project at that time.

- b. Adverse impacts upon the facility environs could be reduced through a number of measures. Measures already included in present plans include construction of a low profile facility which does not present a traditional jail-like appearance nor block views, substantial landscaping, location of the facility so that impact upon surrounding neighborhoods is minimized, and buffering the facility from residential areas with parking lots. Noise, traffic, dust, and other impacts resulting from construction could be minimized by taking special precautions during the construction of the project. The decision to construct a low rise facility will result in significant noise reduction (when compared to a high rise structure) because it will not be necessary to drive piles for the foundation.
- c. The people whose homes or offices are located within the project site, and who will be forced to relocate will be compensated by the County. The County must pay the owners fair market value for their property, provide financial assistance for relocation, and assist people in finding housing or office space elsewhere if so requested. This will reduce the adverse economic impacts upon those forced to relocate.

11. Air Quality and Noise

- a. The following mitigating measures are suggested to help reduce impacts during operation and construction of the proposed Facility:
 1. Staggered work hours to reduce congestion, thereby reducing CO emissions in and near the parking lots.
 2. Consider pollutant emissions and combustion temperature in the choice of heating and cooling system equipment.
 3. Wet down the site regularly during construction.
 4. Stagger construction tasks which lead to high particulate concentrations such as grading, paving and demolition.
 5. Exercise care in refueling activities to reduce hydrocarbon emissions during construction.
 6. Use properly maintained vehicles and equipment for construction.

7. Provide proper coverage of materials leaving and coming to the site.
- b. The following measures are recommended to minimize the construction noise impact of the project:
 1. The quietest available equipment should be used during the construction of the project. The County and the City of Martinez should consider implementing a construction noise ordinance with quantitative noise thresholds to ensure that this takes place.
 2. Construction operations should not occur before 8:00 a.m. or after 6:00 p.m., to minimize annoyance to nearby residents.
 3. Equipment operations should be scheduled to keep average construction noise levels as low as possible. Also, the noisiest equipment should be scheduled to operate during the times of highest ambient levels.
 4. Noisy equipment should be located as far as possible from site boundaries.
 5. Consider providing enclosures for stationary construction equipment and barriers around particularly noisy areas of the site.
- c. The following measures to minimize the impact of the increased traffic noise on Court Street associated with Alternative E, should be considered.
 1. Measures to reduce peak traffic congestion in the Civic Center area, such as staggered working hours, could be implemented to reduce the vehicle noise resulting from stop and go traffic.
 2. The County and the City of Martinez should be encouraged to enforce the State of California noise standards for motor vehicles.

12. Historical and Archaeological Aspects

Although no archaeological or historic resources of significance were revealed on the site, if during site preparation or project construction any evidence of such resources are discovered, work within a 30 meter radius of the find should cease and an archaeologist retained to evaluate the find.

13. Energy

Potential mitigation measures which could minimize the energy-related impacts of the project involve principally either a reduction in the overall consumption of energy or a switch to sources with reduced adverse environmental impacts. In some cases a mitigation measure to reduce one impact may intensify another, and these tradeoffs are noted where applicable.

a. Energy Efficient Design

Adherence to proposed Title 24 energy standards for non-residential buildings has been offered by the architect as a mitigation measure in itself. Title 24 sets only minimum standards and does not appear to be designed to encourage mitigation measures beyond those minimums; such encouragement is warranted for this project.

Inherent in the programming and design of a new building is the opportunity to plan for reduced energy consumption or the use of low impact energy resources. It appears, however, that energy conservation has been given a low priority in the County's program for the Detention Facility.

A change in priorities could result in improved energy performance and reduced adverse environmental impacts. For the proposed project, there are specific design characteristics of the overall plan and the building envelope that could be manipulated to lower dependence on high energy systems. The orientation, the size, location and placement of glazing, the selection of structural components for appropriate thermal mass or insulative qualities, and the use of natural ventilation are design elements that can be optimized for greater energy efficiency.

The assumption that increased energy efficiency is synonymous with increased first cost is an attitude with which some experts might take issue. Several recent studies seem to agree that new buildings designed to meet both prescriptive and performance standards have not only a lower life-cycle cost, but also a lower first cost. In some cases, a study for the State of California showed minor increased capital costs for energy conservation, but these were often offset in the first year due to energy cost savings. (Hugh Carter Engineering Corp., Non-residential Energy Conservation Standards, Title 24, Economic and Energy Effectiveness Study, pp. 55-74.)

Most of the capital savings are attributable to reductions in HVAC (heating, ventilation and air conditioning) equipment as well as fenestration. Design costs will increase, particularly

the cost of electrical/mechanical engineering design services; however, the Arthur D. Little study found the payback due to energy savings was less than one year in most cases. (Arthur D. Little, An Impact Assessment of ASHRAE 90-75.)

Whether these construction cost savings begin to diminish once the threshold of prescriptive or performance standards has been crossed, resulting in a building even more energy-efficient, has not been fully studied.

b. Specific Examples of Energy Conservation Measures that Could Result in Reduced Consumption

The following is a list of possible design or program modifications that could be made in succeeding design stages to reduce energy consumption of the proposed project. The examples that follow are intended only to provide a sampling of the opportunities and should in no circumstances be construed as comprehensive or exhaustive. In general, an attempt has been made to select areas that are not specifically regulated by Title 24 standards but, rather, would enhance or augment these standards.

i. The Site. Deciduous vegetation, including both trees and ground cover, can be used to shade walls and paved areas adjacent to the building to reduce solar radiation striking the building and thereby reducing summer cooling loads.

ii. The Building

(a) Daylighting. Window area and placement on each of the facades determines the amount of available outdoor light for daylighting. It may be beneficial to decrease or increase the area of glazing to achieve the state where daylighting can effectively replace a portion of artificial illumination. This could reduce the amount of energy consumed for excessive artificial illumination, as well as the energy consumed in removing excess heat from that illumination—but only if the artificial system is deactivated when its output is duplicating natural light.

If skylights are used for natural lighting, they could be double or triple glazed to reduce heat loss. If windows are used for natural lighting, the light will penetrate more deeply into a space as the window is raised in height in the wall. Windows planned to make beneficial use of winter sunshine should be positioned to allow occupants the opportunity of moving out of the direct sun radiation. Judicious use of reflective surfaces, such as sloping white ceilings, can enhance the effect of natural lighting and increase the yearly energy saving.

(b) Thermal Mass and Location of Insulation. The use of low energy content construction materials and methods can reduce the indirect energy inputs required for construction.

Studies show that the best possible location for insulation is outside the mass of the building. This makes it possible for the mass of the building to act as thermal storage, thus dampening the effects of diurnal weather variations and indoor occupied-unoccupied temperature cycles.

If possible, insulation should be located not only on the outside of a wall section, but also on the outside of the structure itself. This reduces air leakage through construction joints and heat loss by eliminating the effect of cold bridging through-the-wall concrete or steel.

(c) Still Air Film. The existence of a still air film on building facades reduces heat loss and gain through the facade. The external film's heat retention characteristics can be increased to retain the film on buildings by the use of a textured surface. Many materials available today are designed for use as protective coatings and for improving the appearance of weathered exterior walls. However, the use of "textured surface" will increase the total surface area of the building in question, which will, in turn, increase both the radiated and the surface-to-air heat transfer.

Vines are another method of maintaining the still air film which, like the protective coatings, serve a dual purpose. They also provide shade. However, vines may eventually destroy certain building materials (possibly resulting in the eventual increase in energy use).

(d) Color. Light or dark color of exterior walls and roofs affects heat gain and heat loss. On exterior surfaces, light colors reflect solar radiation, and therefore decrease solar heat gain; dark colors generally absorb solar radiation, and therefore increase solar heat gain.

In building interiors, color plays an important role in actual and apparent energy efficiency. The phenomena of selective absorption, reflection and transmission are of great practical value. For interior surfaces, light colored walls, floors and ceilings, for example, have greater reflectance than dark colors, resulting in more effective use of available light.

Color selection should be carefully considered in view of the available light source (i.e., natural, incandescent, fluorescent, etc.). Where efficiency is the goal, incandescent

light should be controlled with materials that absorb the minimum red and yellow; mercury light should be controlled with materials that absorb the minimum blue and green. This is not to say that the color materials add to the efficiency of light at the primary source, but they do have an effect on apparent intensity.

Carpeting should be considered not only for the effect of color in lighting efficiency, but for thermal comfort as well, particularly over slabs on grade.

(e) Smoking Areas. If smoking areas can be segregated from non-smoking areas, near existing ventilation systems, then excessive ventilation might not be required throughout an entire floor area.

iii. Lighting Systems

Lights are a major consumer of electrical energy in buildings, both for the energy required to operate the luminaires and for removing the heat being generated from these luminaires in air conditioned space.

Energy consumption for lighting (Kilowatt-hours) is the product of power input to the luminaires (Kilowatts) and the time duration for which the luminaires are being used (hours). Thus, to achieve maximum energy savings from lighting, both power input and time of use should be controlled.

Power input can be reduced by the proper design of the lighting systems which includes the selection of visual tasks, light sources, room finishes, wiring and switching. Even though the time of use for lighting is directly related to building function and operation policy, individual voluntary effort to cooperate with the objectives will play a major role in achieving the goal for energy conservation.

The limitation of power in lighting systems is an important step toward energy conservation.

(a) Task Lighting. Provide the required illumination for the visual tasks in the working and living areas only and appropriate lower levels in the general areas, such as corridors, storage and circulation areas.

(b) System Selection. There are numerous types of lighting systems utilizing various light sources. Each system has its proper applications for visual tasks related to the space. However, certain systems, such as an indirect system, are inherently less efficient and should be avoided.

(c) Efficient Light Sources. Different light sources have different characteristics (color, life, physical size, and lumens output per watt input), and the choice should be the most efficient source that is appropriate for the application.

(d) Efficient Luminaires. Efficient luminaires produce a greater amount of light on the task with less power input. Lighting effectiveness is measured by the coefficient of utilization (CU) of the luminaire in a particular space. Luminaires of identical appearance may vary considerably in their performance due to internal construction, control medium and candle power distribution.

(e) Room Characteristics. Dark colored surfaces absorb light, whereas light colored finishes may cause glare. In general, ceilings should be finished in white (80-90 percent reflectance); walls, except for small accent areas, should be medium to light (50-80 percent); and floors should be light medium to medium (20-50 percent).

(f) Layout. Common practices have given too much emphasis to geometric pattern of luminaires for aesthetics and uniformity. Energy-conserving design must give preference to better visual performance for the user with secondary concern for geometry. In general, an effective lighting layout should avoid locating luminaires directly in front of the visual task viewed by the user.

(g) Control. Use separate and convenient switching for task areas of different use patterns. Switching should always be designed to utilize daylighting whenever practical.

Lighting controls by manual or automatic switching of lamps (particularly fluorescent lamps) will shorten the life of the lamps. However, energy savings should offset the cost of lamps whenever the lights (flourescent) can be turned off for over a five minute period. The life of incandescent lamps is generally not affected by their operating cycles.

Effective switching systems cannot always rely on manual operations. However, automatic switching should be used with discretion. It should be used only for large areas as the cost of automatic switching devices is quite high.

(h) Exterior and Security Lighting. Eliminate exterior lighting except where the lighting is to be used for the purpose of identifying the building entrances and egresses,

and/or for security. Use efficient light sources (i.e., high pressure sodium vapor lamps). Use efficient luminaires (prismatically controlled lens, rather than general diffused, decorative geometric forms). Use photo cell control for turning "on" and time clock for turning "off" the exterior lights. Coordinate street lighting with security lighting and eliminate duplication.

iv. Power

An electrical power system by itself without connected loads is not an energy consuming system. Power losses in a building are generally limited in magnitude. However, there is still room for improvement in power consuming equipment used for lighting and building mechanical systems.

v. HVAC Systems (Heating, ventilating and air conditioning)

Passing contaminated air through charcoal and similar filters to remove odors, and then recycling the clean air, can reduce exhaust air quantities. A means of reducing the energy demands of ventilation systems is to transfer heat from the exhausted air to the incoming air stream by heat exchangers. The selection of the particular device depends on the thermodynamic qualities of each air stream—the exhaust upon the room conditions and the intake upon climatic conditions.

vi. Food Service Operations

- (a) Vision Panels on refrigerators to reduce opening doors.
- (b) Equipment Sizing sized to task; avoid oversizing.
- (c) Ovens. Use of the convection type rather than prevalent rotary ovens which require a long warmup period. Microwave ovens may be best if convenience type feeding is used.
- (d) Ice Machines may be preferable to large scale refrigeration of soft drinks (in commissary type areas).

vii. Solid Waste

The savings in raw source energy may be considerable by implementing the following:

- a. Install on-site waste heat recovery incinerators for disposal of solid wastes. The waste heat can be used for

space heating, ventilation, water absorption, refrigeration, or other thermal uses. Air quality standards may preclude this measure.

- b. Separate and salvage usable materials which have a commercial value. Recycling many materials consumes less raw source energy than producing virgin materials and could have economic benefits as well.
- c. Consider the use of solid waste for composting.

viii. Operation and Maintenance

Operation and maintenance are extremely important in energy conservation. One expert claims that the one factor, more than any other, that determines energy consumption of a building is how it is used. (Spielvogel, Lawrence G., "Exploding Some Myths About Building Energy Use," *Architectural Record*, February, 1976, pp. 125-128.) In order to assure proper operation and maintenance, the mechanical and electrical systems must be designed and located in a manner which will permit ready access to equipment.

(a) Personnel and Training. It is important that the operating personnel be fully trained in the operation of all building mechanical and electrical systems in order to operate and maintain the building efficiently. Proper maintenance requires skilled personnel, perhaps at higher labor rates which can often be offset by lower operating costs. For example, proper operation can reduce the energy for heating and air conditioning in some cases more than 50 percent.

(b) Operation and Maintenance Manuals. All systems should have comprehensive operation and maintenance manuals prepared by the mechanical and electrical designers and construction manager in cooperation with the architect.

The manuals should describe the design intent of the systems, capacities of all mechanical and electrical components of the systems, the modes of operation of each system under varying cooling and heating load conditions. Maintenance frequencies and details regarding methods and materials for all mechanical and electrical equipment should be a part of the manuals.

(c) Outdoor Air Intakes. Outdoor air which is used as makeup to replace air exhaust through hoods imposes a heating and cooling load which can be materially reduced by a direct supply to the hood instead of through the air supply system. Air supplies

to a hood need only be tempered in the wintertime and require no cooling in the summertime.

Care should be taken in locating outdoor intakes so that they do not pick up unwanted radiant heat reflected from adjacent roofs or wall surfaces.

(d) System Optimization. The climate has a major effect on building heat loss and heat gain through the building envelope and on the energy required for ventilation to combat infiltration. The peak loads used for design conditions determine the size and capacity of the heating and ventilating systems. The duration of the temperature and humidity conditions, modified by wind and sun, determine the yearly energy consumption.

A detailed analysis of ambient outdoor conditions is necessary in order to optimize the system or systems that can be used in sequence to handle interior area heat gains during the spring, winter and fall. Maximum energy conservation results from using adiabatic cooling (no heat loss or gain), economizer air cooling, and mechanical refrigeration with or without energy storage, in accordance with wet and dry bulb outdoor temperatures and corresponding interior zone heat gains. A sophisticated control system is required to accommodate such a sequence.

(e) Heat Storage. The use of thermal storage, particularly for cooling, can have the effect of reducing peak electrical loads and making system operation more efficient by running equipment at off peak hours when outdoor summer temperatures are coolest. In an air-conditioning system it is possible to cool a tank of water or other storage medium if excess cooling capacity is available during operational hours. One of the attractions of this approach is that the temperature difference between cold storage (say, 45 degrees Farenheit at the coldest) and building temperature (approximately 70 degrees Farenheit) is less than the temperature difference between hot storage and room temperature. As a result, less cooling effect is lost from cold storage than from hot storage. Moreover, cold storage is preferable to hot storage because losses from hot storage in a building add to the summer air-conditioning load.

(f) Domestic Hot Water. Provide warm water at 105 degrees Farenheit at the rate of $1\frac{1}{2}$ gallons/day, per person, or at a flow rate of $\frac{1}{4}$ gal/min/lavatory and 3 gal/min/shower. Individual showers use less water than gang showers. Ceramic-type valves for showers and lavatories reduce leakage and maintenance. Use thermostatic controls (mixing valves) where applicable and provide insulation beyond minimum standards. Do not heat water and store it at higher than utilization temperature.

Where special functions, such as dishwashing, require hotter water, provide a local booster heater rather than heat all water in the building to meet the localized conditions. Use cold water in laundry and permanent press prison clothing. Avoid common practice of providing hose bibbs in food service areas for hot water supply. Water and energy are wasted by workers using hose rather than alternate cleanup methods.

In addition, the equipment schematic drawings and electrical and control drawings, along with operating instructions, should be posted on each major piece of equipment.

c. Total Energy Systems

For years the natural gas industry promoted the total energy concept as a competitor to electricity. In a total energy system, fuel is used to generate electricity and/or mechanical energy, and the waste heat is used for space heating, water heating, and perhaps for absorption air conditioning. Total energy systems for commercial buildings, apartment complexes, and industries can offer overall efficiencies approaching 70 percent. Such a system is now in use at the San Diego Metropolitan Correctional Center. The technology exists for some immediate applications. Further research could make total energy more attractive by perfecting advanced heat storage techniques and by developing ways of balancing electric and heat loads within building systems.

d. Non-depletable Energy Sources

i. Solar Energy

(a) Applications. Solar energy offers probably the most technologically feasible and cost-effective potential source of non-depletable energy for the project. The cost and technological complexity of solar utilization is generally inversely proportional to the highest temperature required in the conversion process. Ranked below are potential applications in descending order of economic attractiveness:

1. Domestic Hot Water Heating (which is proposed for this project)
2. Space Heating
3. Space Cooling
4. Steam for Electrical Generation

One exception to the temperature relationship is direct solar conversion to electricity--a process technologically proven but so expensive as to be eliminated from consideration in this report, as is steam production for electrical generation.

(b) Domestic Hot Water. Domestic hot water is by far the best potential candidate for solar utilization. Estimates of domestic hot water demand have not been provided by the project architect. For purposes of this report an estimate of 30 to 60 gallons per day per inmate for a total of 11,490 to 22,980 gallons per day appears reasonable (see Background Report Chapter 15, page 44).

Using an average of the high and low daily estimate (17,235 gallons) raised 65 degrees Farenheit, results in 33,960 therms equivalent of hot water consumed yearly at 110 F. to 180 F. at the point of use. With a 65 percent efficiency in fuel oil conversion at the boiler, the total annual input for domestic hot water is estimated at 52,246 therms or 73,145 gallons of No. 2 fuel oil.

Interactive Resources, Inc., calculated that a solar-augmented domestic hot water system with 10,000 square feet of collector, costing an additional \$277,000, could supply 83 percent of the total water heating load. At January, 1977 prices of approximately \$0.39 per gallon of fuel oil, the yearly savings would be \$21,248 for solar heating over fuel oil heating of water.

The use of low-flow showerheads and other hot water conservation techniques could save 30 to 50 percent of the projected use and thereby result in a proportional reduction of the solar system cost and its potential for yearly savings.

Assumptions regarding the yearly escalation of fuel costs, the yearly consumer price index rise, a discount rate, maintenance costs, and the functional life of the solar system would have to be used in a life cycle cost analysis to determine the economic attractiveness of incorporating such a system in the building design. In general, energy costs are increasing at a yearly rate approaching 10%.

Bentley Engineers notes that using solar applications for hot water heating might reduce the space heating load to the point that natural gas may become a feasible alternative for space heating. Natural gas currently costs about \$0.19 per therm whereas fuel oil costs about \$0.26 per therm. Natural gas can be burned slightly more efficiently than fuel oil at a lower air quality impact cost.

At least three detention facilities in the United States are planning to utilize solar energy for one or more applications (Federal Youth Center, Bastrop, Texas; Federal Correctional Institute, Tallahassee, Florida; and Community Correctional Center, Tampa, Florida.)

All three proposals include the development of an on-the-job training program in solar energy with inmate participation, a possibility that has been rejected for the Contra Costa County project due to the short periods of incarceration involved.

(c) Space Heating. Whereas hot water requirements are relatively constant year round, space heating loads are highest in the winter when solar insolation is least; and virtually non-existent in the summer when solar insolation is maximum. For this reason, as well as increased equipment complexity, space heating with mechanical solar systems is not as economically attractive as hot water heating, but it is highly feasible from a technical standpoint. Solar space heating systems are now operating successfully in several residential and non-residential structures around northern California. A detailed life cycle cost analysis could determine the feasibility of mechanical solar space heating for the proposed project. In light of recent increasing costs and shortages of both natural gas and fuel oil this alternative becomes more attractive and probably more cost effective for the future. The nationwide energy problem which has developed over the last several months serves to focus on the need to implement energy alternatives which do not rely on the use of fossil fuels.

(d) Space Cooling. Space cooling with mechanical solar systems, using absorption chillers, is even less economically attractive than space heating. Even though a number of systems are technically feasible as well as operational, the applications are not highly dependable at this time and should be considered still experimental. Space cooling by nocturnal radiation is a simpler alternate approach that may be applicable to the proposed project. Solar space cooling should not be totally rejected without some consideration, but it is unlikely to prove to be an attractive investment.

(e) Funding Sources for Solar Applications. Through implementation of the Solar Heating and Cooling Demonstration Acts of 1974, millions of dollars are now being made available for both residential and non-residential solar demonstration projects throughout the United States.

Information on the non-residential grant program, which is open to virtually any application, may be obtained from the Division of Solar Energy, Energy Research and Development Administration, Washington, DC 20545.

In addition, funding is being provided by utility companies (PG&E has a very active solar demonstration program) and the State of California Energy Resources Conservation and Development Commission.

D. Alternatives to the Proposed Action (Background Report Chapter 6)

The purpose of this section of the EIR is to set forth the main alternatives and discuss the consideration given to them in the course of arriving at the project as it was tentatively proposed by the Board of Supervisors on February 1, 1977, and as appears in the project description. On that date, the Board resolved: "The schematic design as presented by the project architect is approved subject to final decision following review of the project's Environmental Impact Report".

As is the case with many major projects, the possible alternatives to the Detention Facility project are of several kinds: there is a range of basic alternatives, or courses of action, that were at least potentially available to the County at the start of the decision-making process; there are specific alternatives that received special attention either for comparative purposes or because they were proposed by various parties; and there is an almost infinite array of variations on those options.

In order to deal with this complex situation, this section has categorized the alternatives into two groups according to their applicability to the project at different stages in its evolution. In order of presentation, these groups are:

1. Basic alternatives--the main courses of action actually or potentially open to the County in late 1975 when it took the first actions leading to the proposed project.
2. Major "Footprint" alternatives--the main options open to the County following a tentative decision on September 28, 1976, to locate the Detention Facility in the County Civic Center

Because the subject of this section is the main alternatives which preceded the formulation of the project proposal--which is a tentative and "schematic" design alternative--it is left to other sections to discuss the alternatives available to the County for refining the project before it is approved or committed to construction. These include the details of the building's external design, the choice of drainage installations, and the particulars of traffic circulation and parking.

1. **BASIC ALTERNATIVES**

In 1975, Contra Costa County's decade-long effort to build a "Detention Center" (jail and courts complex) in the County Civic Center of Martinez evolved to a point just short of the call for construction contract proposals. However, for reasons which are discussed in the Project Description Chapter, the Board of Supervisors made a complete reappraisal

of the existing proposal. This reappraisal resulted in a decision by the Board, in December, 1975, to terminate that proposal. In February, 1976, the Board directed that the detention facility project be restudied and that new plans be developed. At this initial stage in the present project's planning process, eight basic alternatives which had the potential to legally and humanely satisfy the detention needs of the county, were potentially available to the county. These were:

- Alternative 1: No Project (Abandon the project altogether)
- Alternative 2: Substitute Alternatives to Incarceration.
- Alternative 3: Remodel the Existing Jail Facilities
- Alternative 4: Convert Non-Jail Buildings
- Alternative 5: Construct the 1975 "Detention Center" Project
- Alternative 6: Build a New Facility in the County Civic Center
- Alternative 7: Build a New Facility in Another Location
- Alternative 8: Build More Than One Detention Facility

Before beginning the analysis of the various alternatives it is important to note that one consideration, timing, is relevant to the evaluation of each alternative. Because of the acknowledged inadequacy of the existing County Jail, it is a major legal and practical concern that replacement facilities be made available soon. Another inducement for rapid construction is inflating construction costs. Consequently, the sooner the facility is constructed the less it will cost the County. This is an important consideration because the county has a fixed amount of funding available for a new detention facility.

It is important to note that in evaluating the various alternatives the concern about timing tends to generate a bias toward those alternatives which could be implemented most rapidly. It was felt that this should be pointed out before presenting an evaluation of the various alternatives in order to avoid excess emphasis upon this consideration during the analysis of alternatives.

a. ALTERNATIVE 1: NO PROJECT

The Environmental Impact Report process requires that the "no project" alternative be considered. In this instance, selection of the "no project" alternative would mean continuing to use the present Main Jail and Branch Jail without significant change. However, as has been discussed throughout the Background Report chapters, those facilities are inadequate for reasons of housing space, program space, inmate segregation capabilities, inmate services and capacity. For example, in its March, 1976 Report of Inspection of Local Detention Facilities to the California Legislature, the State Board of Corrections pointed out that the County's present Main Jail (Martinez) is continually overcrowded and that the Branch Jail (Marsh Creek) is unacceptable from the point of view of inmate segregation and security. Several county grand juries have reached similar conclusions.

The Main Jail has been found to be structurally deficient with respect to seismic and fire safety. The project architect, Kaplan and McLaughlin concluded that the building would not acceptably withstand a major earthquake and that its performance in a moderate earthquake is questionable.

The County has found continued use of the Main Jail to be unacceptable (Resolution 76/440, June 10, 1975), and the judiciary has altered the use of the Branch Jail even as this EIR was being prepared. The "no project" alternative, then, is not feasible.

b. **ALTERNATIVE 2: SUBSTITUTE ALTERNATIVES TO INCARCERATION**

Throughout the history of the Detention Facility project and its predecessors, critics of the County's plans have urged the increased use of alternatives to incarceration as a means of eliminating jails, or as a means of avoiding a detention facility project, or as a means of reducing the scale of a detention facility project. They have cited programs being used in other jurisdictions, but not by the County, or possibly being used with greater effect elsewhere, as reasons that the County could reduce its jail population.

The County has responded to this criticism by noting that it too is interested in keeping its jail population to a minimum, that it is doing what it can under the law and with its resources to release people who have been arrested or convicted, and that it is actively investigating new programs.

In early 1976, the Board of Supervisors directed that the new Detention Facility should be designed to maximize the use of alternatives to incarceration and it directed the Mental Health Advisory Board to serve as its Advisory Committee on alternatives to incarceration programs.

The proper use of alternatives to incarceration is one of the more complex, controversial, and ambiguous subjects in the field of criminal justice planning. It is a subject complicated by programs with overlapping effects, the employment of judgement, legal constraints and interpretations, conflicting beliefs, and the interactions of different parts of the criminal justice system (i.e., police, courts, corrections).

With respect to the relationship between alternatives to incarceration and the Detention Facility project, to wholly eliminate the need for a County "jail", alternatives to incarceration programs would have to provide for all classes of pre-trial and maximum security inmates now being held; and, to eliminate the need for a new County detention facility project, alternatives to incarceration programs would have to provide for all but 100 or fewer inmates

who could be accommodated in a remodeled Main Jail (assuming the existing Main Jail is physically suitable for remodeling). Neither of these is feasible. As long as State law requires the County to accept several classes of prisoners, and makes certain crimes subject to arrest and incarceration, the County must provide a detention facility. And, as long as there are substantially more than 50-100 pre-trial and maximum security inmates who must be held by the County a detention facility project is a necessity. The alternatives to incarceration issue, then, really concerns their potential to influence the size and, to some extent, the function of the proposed facility.

It is useful at this point to review some assumption regarding future County inmate capacity needs. The County has made certain projections regarding detention facility capacity needs in the short run following construction (to 1985) and in the period through the year 2000. These essentially indicate that a new County facility designed for about 400 inmates (the project is for 383 inmates), which is the upper limit for a single facility built in accordance with national guidelines, would reach capacity in the 1985-1990 period. The assumption is that a new facility, or facilities, will be required at that time.

Presumably, if the County is presently incarcerating significant numbers of inmates who could be released under existing programs, the forecasts might be erroneous and a lower design capacity might be practicable. Contra Costa County, however, appears to operate with little margin for increased releases under present laws. This is reflected in a finding by the State Board of Corrections that in 1974-75 only two California counties, both rural, had lower incarceration rates.

The project's programming consultant, Facility Sciences Corporation (FSC), examined current county pre-trial release policies in order to determine to what extent the expanded use of alternatives could reduce inmate population levels. They noted that Contra Costa County's opportunities to increase release rates, and consequently, to decrease the number of persons detained are slight.

In view of these findings and opinions, the forecasts for future detention systems populations appear to be reasonable at this time.

A consideration that could change the accuracy of the forecasts over time would be substantial changes in public attitudes and laws regarding the use of alternatives to incarceration. The prospects, however, are highly contradictory. Based on the recent past, a period of increasing permissiveness and liberality, one might expect the state's laws to provide more opportunities and

resources to divert people from incarceration. But, a different expectation is equally or more possible if one considers very recent attitudes and events. The public appears to be increasingly concerned over rising crime rates and the state legislature is reacting with more conservative laws and programs which may result in more people being incarcerated and for longer periods of incarceration.

Recent State laws ending indeterminant sentencing and sentencing older juveniles who commit serious crimes to non-juvenile facilities are two examples of legislation increasing facility capacity requirements. There is also the possibility that the two trends could operate simultaneously, but selectively. At this time, then, there is no clear expectation that new legislation on alternatives to incarceration will substantially lower the county's incarceration rates in the future, and they could be increased.

The result of the preceding commentary is that new practices or legislation regarding alternatives to incarceration do not appear to offer substantial opportunities to modify the forecasts on which the proposed Detention Facility project are based.

c. ALTERNATIVE 3: REMODEL THE EXISTING JAIL FACILITIES

One alternative to replacing the existing Main and Branch Jail facilities would be to remodel them to correct their deficiencies and upgrade them to provide adequate detention conditions. This course of action often has been suggested, primarily for the Main Jail (the Branch Jail usually is conceded to be a temporarily converted honor farm dormitory that should revert to its intended use), by critics of a large new facility for detention. Reasons for considering this include: claimed lower building costs, the desire to obviate the construction of a large building in the civic center, and the desire that the county maintain limited capacity facilities to accommodate only very dangerous persons.

In the past, the remodeling alternative would have involved rebuilding the Main Jail to satisfy the California Minimum Jail Standards as well as fire and seismic safety requirements. Now, since the Board of Supervisors has resolved to comply with recognized national guidelines, including but not limited to Standard 11.1 of the National Advisory Commission on Criminal Justice Standards and Goals, any remodeling should also comply with applicable portions of these guidelines.

No major change seems imminent in the laws under which Contra Costa County operates its criminal justice programs which would markedly change (reduce) the number of inmates who must be accommodated. Therefore, the County must plan for a large and growing inmate population.

Under the State of California Minimum Standards for Local Detention Facilities (Title 15, California Administrative Code), the State Board of Corrections has rated the Main Jail at a capacity of 104, and the Branch Jail at 50, for a total of 154. If the Branch Jail at Marsh Creek were reverted to rehabilitation use instead of being remodeled, and if program space would be provided at the Main Jail, its capacity would be reduced below 104 inmates.

These ratings are based on utilizing for housing purposes all space presently used for housing. However, since there is a need to allocate considerable space for recreation, inmate services, medical services, and other programs, remodeling that would also provide for these would reduce the combined capacities of both facilities well below 154. (Remodeling the Main and Branch Jails to satisfy the applicable guidelines would probably provide space for no more than 100 inmates, according to the EIR prepared for the previous "Detention Center" proposal.)

An important consideration with respect to remodeling is the structural condition of the present Main Jail. The Detention Facility architect, Kaplan and McLaughlin, evaluated its structural condition as part of its site selection and development study. They concluded that the building would not withstand a major earthquake and that its ability to withstand a moderate earthquake is questionable. They also noted that unless the present interior walls were retained in place, the costs of rehabilitating the structure would be on the order of, if not greater than the cost of building a new structure.

Because of the inability of the existing facilities to provide significant capacity, and because of the considerable problems and costs involved in making the present Main Jail structurally sound, the County rejected this option.

d. ALTERNATIVE 4: CONVERT NON-JAIL BUILDINGS

Another alternative which incorporates remodeling is the conversion of other buildings to detention facility use. Among their suggestions were the use of the former Martinez Community Hospital and the "Mothball Fleet" of deactivated U.S. Navy ships anchored near Benicia.

The main problem with this alternative is finding buildings which could be practicably and economically converted to detention use. Detention facilities are specialized buildings. Since the applicable state requirements and national guidelines must be satisfied, it would be difficult to find buildings which could be converted so that they satisfy the applicable requirements, even

with the investment of a considerable sum of money. It is possible that the costs of conversion would be more expensive than new construction.

The feasibility of this alternative is also strongly influenced by the significant amount of building space required for the project. Assuming space allocations similar to those proposed for the Detention Facility project, approximately 186,000 square feet of floor area would be required. As an indication of how much building space this represents, the 12 story County Administration Building, and its North Wing, in Martinez, at approximately 144,000 square feet of floor area, contains less than that amount. Given the large amount of space required, finding a large enough building or building group to convert to detention uses would be difficult in the Martinez area.

The County has rejected this alternative as infeasible, given the amount of space required, and the complex standards which must be met by any structures used for detention.

e. **ALTERNATIVE 5: CONSTRUCT THE 1975 "DETENTION CENTER" PROJECT**

At the start of the Board of Supervisors' reconsideration of the detention facility situation in late 1975, the option of proceeding with the "Detention Center" project was one of several courses of action open to it. The alternative was one of four presented to the Board by the County Administrator on December 22, 1975, and a variant of it, calling for a reduced cost version, was a second.

However, between June 1975, when the Board approved that project's building plans and that December meeting, several things had taken place that made this alternative marginal. One was the agreement with State Senator Nejedly to provide a minimum of one-third single-occupancy cells which would have increased construction costs, as would have the addition of slit windows which also were under consideration. A second was the successful drive by project opponents to put to vote the matter of whether or not the County should adhere to "national guidelines" for its new detention facility. Although the matter ultimately was defeated by the electorate, the initiative had the effect of making these guidelines a County political issue. Finally, the report of the County's cost evaluation consultant, the William Simpson Construction Company, indicated that inflation had raised the probable cost of the project from about \$20 million to a new figure of \$26 million, or about \$6 million (not including courts) more than the County had accumulated for the project.

The combination of organized opposition, an obsolete design, and extremely high costs made the 1975 Detention Center project less desirable than a new design by early 1976, and the Board of Supervisors terminated the project on February 10, 1976.

f. ALTERNATIVE 6: BUILD A NEW FACILITY IN THE COUNTY CIVIC CENTER

Historically, County plans to build a new detention facility have focused on the County Civic Center in Martinez. As early as 1963, the Contra Costa County Civic Center Plan proposed a jail/courts facility there. Subsequently that proposal was reflected in the County's and the City of Martinez general plans (see Plans and Policies section) and land was acquired for Civic Center development. It was recognized that courts and governmental agencies comprising a large part of the County's criminal justice system were already present there.

The County Civic Center also had disadvantages: space for buildings and parking was not ample; the Civic Center adjoined residential development, accessibility was not as good as at some other locations, and the areas' geology posed some problems for certain kinds of construction.

There were four main courses of action available to the County for building a new detention facility in the County Civic Center, and these are discussed below.

i. Alternative 6a: Build a Redesigned Facility on the "Detention Center Site"

Selection of the former one and one-half block "Detention Center" site (or a similar area) would have had the advantages of a considerable body of available information, including soil and geologic studies and an EIR dealing with the location, and completed land assembly. If an acceptable building could have been designed for the location, it probably offered the fastest redesign opportunity of any of the alternatives.

The site's disadvantages, however, were substantial. The relatively small site (about 1.4 acres) required a 6-story building under the former design criteria that allowed space-efficient multiple-occupancy cells and provided for 343 inmates. The new design criteria, calling for single-occupancy cells and a somewhat larger design capacity, would have resulted in a much larger and probably taller building. The site's location on a highly visible elevation in the Civic Center and immediately adjacent to residential development was controversial in 1975, and would have been objectionable in 1977. Furthermore, the combination of a large building and the site's geologic conditions probably would have required driving foundation piles for the new project, just as piles were required for the previous project. This would have added considerably to project costs and resulted in a period of high noise and vibrations during construction.

This alternative failed to receive serious consideration after high-rise construction in the Civic Center was rejected by the Detention Facility Advisory Committee early in the design process.

ii. Alternative 6b: Build a Redesigned Facility on a New Site Within the Civic Center

Compared with the limitations of the "Detention Center" site, the alternative of selecting a new site within the County Civic Center offered clear advantages: a less obtrusive location was possible, a lower building that did not block views and did not require pile foundations was feasible, increased building ground coverage could be accommodated, and less expensive building construction was practicable. There were also better opportunities to relate the Detention Facility building to parking and to other buildings in the Civic Center.

The disadvantages of the alternative included the prospect that the project would almost totally absorb remaining space in the Civic Center if a relatively low height design was selected, and the possibility that street and utility relocations would be the result.

The Board of Supervisor's action of November 9, 1976, agreeing with a Detention Facility Advisory Committee recommendation that a new design should be based on "Alternative D/E" (described later in this section as "Footprint" Alternative E) embraced this alternative.

iii. Alternative 6c: Build a High-Rise Facility Structure

Given the presence of several high rise buildings in the County Civic Center area (e.g., the Administration Building - 12 stories, the George Gordon Center - 6 stories), the functional interactions between agencies, and the limited amount of land available for Civic Center expansion, a high rise facility is an option with considerable technical, aesthetic, and economic merits.

Even a relatively low six-story high rise facility would have the advantage of occupying considerably less ground area than the proposed facility. Assuming the proposed 186,000 square feet of floor area, the amount of land area covered by the structure could be reduced to as little as 32,000 square feet (compared to a proposed 88,000 square feet). This would free more area for parking, potential sites for other County government structures, and other uses.

A high rise facility would likely be more expensive to construct, particularly because of soil conditions which would probably

require driving pilings through the alluvium to the bedrock below, in order to provide an acceptable foundation for a heavy structure (which concentrates its weight in a relatively small area). Pile driving operations would significantly impact living and working conditions in the project area. In addition, the cost of constructing a high rise building itself probably is greater than the costs of constructing a low facility. Another major disadvantage of a high rise facility is that perceived adverse visual and aesthetic impacts may result from its height (e.g., it would be a prominent visual feature to the surrounding area, and it could block views if placed on higher ground or near existing residences). Also, concern has been expressed that a high rise structure would cause deterioration of the small town character of Martinez.

This alternative was given little consideration because it was known to be unacceptable to the adjoining community, and because it was anticipated that the cost of construction would exceed the County's available financial resources.

iv. Alternative 6d: Build a Low to Moderate Height Structure

The previous "Detention Center" project was much criticised because of its 6-story design, which would have blocked views and become a prominent feature of the Martinez skyline. Opponents of the project advocated a low-rise, or at least lower, design which would be more in keeping with prevailing building heights in Martinez. The desire to have the new Detention Facility designed as a low building was almost universal among Martinez residents who were consulted in the planning stages of the current project.

Early in the design process, it became apparent that a truly low-rise (one or two story) building was impractical in the Civic Center if the Detention Facility had to accommodate the County's unsentenced inmates for the next decade and provide needed parking.

A single story facility presents an especially difficult problem because the amount of floor area required is so great. If the proposal's 186,000 square feet of floor area were all placed on a single floor, the building would cover over 4 acres. Given the limited amount of land available in the Civic Center site (the site area available is approximately 7.5 acres), and the need to provide substantial parking facilities, a facility which consumes so much land is infeasible.

A two story facility with equivalent floor area would probably be somewhat less costly to construct than the proposed facility. It would have the disadvantage of covering more ground area

than the proposed facility, thus leaving less space for parking purposes.

The eventual decision (by the Board of Supervisors on February 1, 1977) was to proceed with plans for a moderate-height structure that would be essentially four stories high (two main levels of two stories each). The building would be about 40 feet tall with rooftop equipment installations adding about 6 - 8 feet in several places. This alternative, in part, is a portion of the proposed project.

g. ALTERNATIVE 7: BUILD A NEW FACILITY AT ANOTHER LOCATION

An obvious alternative to the present project is to construct the proposed facility, or a variation of it, at another location. This approach was discussed in connection with the previous "Detention Center" project and it was again considered during the current planning process.

In evaluating alternative locations for detention facilities, certain factors are particularly important. One is that land for a site must be assembled and acquired. This is a time-consuming process, especially if the land is held in multiple parcels. A second is that new locations often require general plan amendments because large areas are seldom set aside in advance for public uses. The amendment process also requires time to accomplish.

Access and transportation considerations are important in terms of the police transporting persons to the facility, and convenience for visitors and trial-ready inmates. Also important is the coordination of the new facility with other elements of the criminal justice system. Proximity of the facility to the courts is a particular concern because inmates frequently need to be transported to and from court for trials. A detention facility which was not located in central Martinez could be serviced by branch Superior Court facilities, but these would have to be provided near the new facility. Funds to construct the branch court facilities would have to be obtained.

Another location consideration derives from the fact that some authorities in the field of criminal justice believe that inmates should be incarcerated in the communities in which they live or as close as practicable. A criticism of both the previous and present projects is that Martinez is both too distant and too socially different from the home communities of many of the inmates. Other relevant factors include potential citizen opposition, the costs of purchasing land and construction, future county facilities planning, and the time it would take to implement any specific alternative.

The number of potential specific alternative locations is extensive. However, in this analysis location is defined in general terms, such as in the civic center area, or in west county, etc. The intent here is to analyze broad locational considerations, such as those mentioned above, rather than evaluate specific alternative sites (which are even more numerous). Four locations are considered: the Marsh Creek area, a different central county location, west county and east county. It is felt that an evaluation of the four will result in adequate consideration of the broad locational alternatives, and provide information which is applicable to consideration of specific sites.

i. Alternative 7a: Build a New Facility in the Marsh Creek Area

The 1963-1964 County Grand Jury originally suggested constructing a new large detention facility in the Marsh Creek area, at the site of present Branch Jail and Rehabilitation Center, and establishing a temporary holding facility in Martinez. Under that proposal, the new facility would take the place of the proposed project, while a new small Civic Center structure or a remodeled Main Jail would provide temporary detention for inmates going to and from trial.

This option has been rejected for the following reasons: the sewage and utility problems and attendant cost implications, the poor accessibility and logistical problems which would affect local law enforcement agencies and the public, the cost of operating two facilities, public acceptability, and general remoteness to persons visiting or doing business with a detention facility.

ii. Alternative 7b: Build a New Facility at a Different Central County Location

The possibilities of building a new detention facility, a new criminal justice complex, or even a new County Civic Center (with or without a jail) outside of Martinez have been considered by a number of people on different occasions. These proposals have failed to materialize as their short term costs became evident, as individual county functions actually were decentralized, and as available sites were developed for other uses.

Access from other areas of the county by auto would be improved by selection of a location near the intersection of Highways 4 and 680. Both county law enforcement officers and the public would find access by auto quite convenient. Currently there is no access by public transportation, although the AC Transit BART-feeder bus system that serves Martinez could

be relatively easily rerouted to serve the facility. Adverse social and demographic impacts would be lessened by selection of the Highways 4 and 680 intersection location since the potential site is large and neighboring residences are few. The intersection location would also provide greater expansion potential.

The two major reasons why this option has been rejected by the County in favor of the Civic Center location are: (1) the physical separation of the criminal justice system components which would result, primarily between the detention facility and the courts, and other essential ancillary services and (2) the additional time required to construct a non-Civic Center facility.

iii. Alternative 7c: Build a New Detention Facility in West County

The option of constructing a detention facility in west County has received considerable attention during the County's decade-long effort to provide a new detention facility. The following discussion examines the option of constructing a single west County facility to provide for all of the County's pre-trial detention needs. The option of constructing a west County facility in conjunction with a facility in central County, to create a two facility detention system, is examined in Alternative 8. By west County is meant the urbanized area which extends from Richmond and El Cerrito along the Bay to Crockett and Rodeo. Since the Richmond-San Pablo area is centrally located with respect to west County's population, it is the most likely location of a west County facility.

A west County facility deserves consideration because of the large number of inmates who come from that area. An April 15, 1976 census of the County's detention facility population found that 53.9% of the inmates who were County residents lived in west County. In addition, a significant percentage of the out of County inmates were from Alameda County communities in the vicinity of west County (primarily Oakland). Consequently, construction of a facility in west County would best satisfy the criteria of providing detention near the residences of the inmates. It would also provide convenient access for that area's police, attorneys and visitors. Because extensive public transportation is available in west County, a facility located there would be more accessible by public transit.

The disadvantages of a west County facility include the problems of coordinating activities with the courts and other criminal justice agencies, the resulting inconvenience for central and

east County police and visitors, and the time required to construct a west County facility. Location of the County's pre-trial detention facility in west County would complicate the operation of the criminal justice system, since the Superior Court, County Counsel, District Attorney, and other ancillary agencies have most of their operations located in Martinez. Given the high level of interaction required between these agencies and the detention facility, particularly as inmates are brought to trial, locating the detention facility in west County could hamper judicial processes. This impact could be partially mitigated through the expansion of branch courts and other criminal justice operations presently located in west County. Funds for this purpose would have to be obtained. A west County location would substantially inconvenience police and visitors from central and east County because of the significant travel distances which would result. Another concern is that a west County facility would take significantly longer to implement since an acceptable site would have to be found, and new plans would have to be formulated.

Because of these disadvantages, the County did not give formal consideration to this alternative during the 1976-77 planning effort.

iv. Alternative 7d: Build a New Facility in East County

Although it has not been widely discussed as a feasible option, a brief presentation of an east County location is made in order to provide a discussion of all possible locations.

East County's distance from the County's major population concentrations, the residences of most inmates, and the other components of the criminal justice system make it a less desirable location for a single large County detention facility than are several other alternatives. Construction of a facility in east County would generate significant transportation difficulties for police, attorneys, and visitors. For example, Antioch, which is nearer other population centers than are most parts of east County, is roughly a half hour drive (one-way) from central County, and an hour drive from west County. Since the majority of County resident inmates currently come from west County, and most of the remainder are from central County, construction of a facility would make access a major obstacle because of the significant distances and travel times involved.

For the above reasons, the alternative of an east County location was not given formal consideration during the 1976-77 planning effort. (The more feasible alternative of locating a satellite facility in east county is explored in Alternative 8.)

h. ALTERNATIVE 8: BUILD MORE THAN ONE DETENTION FACILITY

An alternative which has received considerable attention in recent years is a multi-facility concept, with most discussion focused upon a system with one facility in west county and another in central county. Another variation of this concept involves a system with one main detention facility and one or more satellite facilities. These two options appear to be the most feasible multi-facility alternatives, and consequently are the two considered in this section.

i. Alternative 8a: Construct One Facility in Central County and Another in West County

This alternative was discussed in the Bay Area Social Planning Council's 1972 Study (see Background Report Chapter 6). The Council recommended that the county construct a relatively small maximum security facility, not to exceed 225 beds, in Martinez; and a multi-security adult facility, not to exceed 220 beds, in west county.

A west County facility would be advantageous to the west County area on a transportation basis. Visiting attorneys, friends, and relatives of inmates from there would find it much more convenient to visit than a Martinez facility because of its proximity and because of west County's more extensive public transportation network. Another advantage of a west County facility would be the opportunity to reduce the intensity of the impacts in Martinez by construction of a smaller facility there.

This option is not incompatible with the proposed detention facility project (except in the form proposed by the Bay Area Social Planning Council). It has been rejected for the present by the Board of Supervisors because of the significantly higher costs, primarily for operation, and because of the longer time required to implement a two facility system.

ii. Alternative 8b: Construct a Main Detention Facility and Satellite Facilities

This alternative could be implemented in different ways, each of which would result in an integrated countywide detention system. The two main (representative) possibilities for developing such a system are: a detention system consisting of a single main facility and satellite facilities in other areas of the county, and a system with a single main pretrial facility and other specialized facilities (such as post-trial incarceration, work-furlough, temporary holding, etc.) at other locations.

The first case, the development of satellite facilities, relates to the desire of some of the county's cities to close their detention facilities, and in part provides a means of increasing

the County's detention capacities. The primary reason some of the cities still maintain such facilities is that they find it too costly and time consuming to deliver each arrested person directly to the county jail in Martinez. In contrast, for example, the cities of Martinez and Pleasant Hill are located nearest the County Jail and have no city jails, but instead they transport each arrested person directly to the County Jail. It has been indicated that if branch County detention facilities were provided in major sub-areas of the county, many of the other cities might also choose to close their facilities and deliver arrested persons directly to these local county facilities. The actual evolution of such a satellite system would require city-county cooperation, joint planning, and changes in criminal justice facilities funding.

It is thought that such a system would improve access to detention and booking facilities and reduce arrestee transportation obligations for the Sheriff's patrol and city police. Visiting inmates would be more convenient during the period persons were detained in facilities near their homes. The main disadvantages of such a system would be the costs of initial implementation and continued operation by the County. Although the operation of such a system might be more economical than the present combination of city and County facilities, because of increasing costs and higher operating standards it would be more costly in an absolute sense for the County to assume its total costs. However, conversion of some city jail facilities into County branch facilities might hold down the cost of instituting such a system, and a method of city-county cost sharing might be developed to equalize the financial burden.

The second case contemplates the development of a county-wide detention facility system consisting of a single main pre-trial facility and other specialized facilities located throughout the county. Possibilities for special facilities include a facility devoted solely to high security post-trial detention, additional work-furlough centers, drug or alcoholism facilities, and temporary holding facilities similar to those covered above. The proposed project does not preclude certain of the options discussed above under Alternative 8.

2. CONCLUSION: BASIC ALTERNATIVES

The direction given by the Board of Supervisors on September 28, 1976, to proceed with the design of a Detention Facility project in the County Civic Center is essentially a combination of Alternative 6b: Build a Redesigned Facility on a New Site within the Civic Center and Alternative 6d: Build a Low or Moderate Height Structure. How this policy direction was translated into design alternatives is the subject of the next part of this section.

This policy direction could be changed if subsequent information indicates that the proposal is undesirable or infeasible.

It should be noted that the carrying out of Alternatives 6b/6d does not preclude the future implementation to varying degrees of certain other alternatives. The study and implementation of alternatives to incarceration (Alternative 2) certainly will proceed, although its effects on future facility needs are unknown. The project is generally compatible with the options discussed in Alternative 8: Build More than One Detention Facility. This is the case because the project will reach design capacity during the 1985-2000 period, and the County will need to consider additional facilities and the role of the Detention Facility in an overall criminal justice facilities system.

3. MAJOR "FOOTPRINT" ALTERNATIVES

On September 28, 1976, the County Board of Supervisors tentatively approved plans to locate a single detention facility having a capacity of 370-383 beds in the County Civic Center in Martinez. Prior Board directions called for adherence to recognized national guidelines regarding detention facility design. Additionally, concern over the project's impacts upon surrounding neighborhoods dictated a low to moderate height facility. Thus, at this point, the "Basic Alternative" decision had been made. This situation gave rise to a number of potential alternatives which satisfied the criteria that had been established. This new set of alternatives was defined by the project architect, Kaplan and McLaughlin.

Kaplan and McLaughlin began developing plans regarding the facility's location within the Civic Center, and its approximate size and shape. In consultation with the Detention Facility Advisory Committee, County staff, and Facility Sciences Corporation, and after visiting new facilities in other areas of the country, the architect produced five alternative "footprint" designs for consideration (see Figures ____). The five "footprints", which utilized four different Civic Center sites, were essentially two-dimensional layouts depicting approximate building position, configuration, and land coverage.

The following is a brief presentation of the five "footprint" alternatives, which includes a discussion of their advantages and disadvantages and an explanation of why each was rejected or selected.

a. ALTERNATIVES A AND B

Alternatives A and B are discussed together because they both use a site which is bounded by Ward, Willow, Mellus, and Pine Streets. In both alternatives, the facility structure is situated in the northern portion of the site (north of Thompson Street). The major difference between the two alternatives is the use of different building configurations.

Figure 68

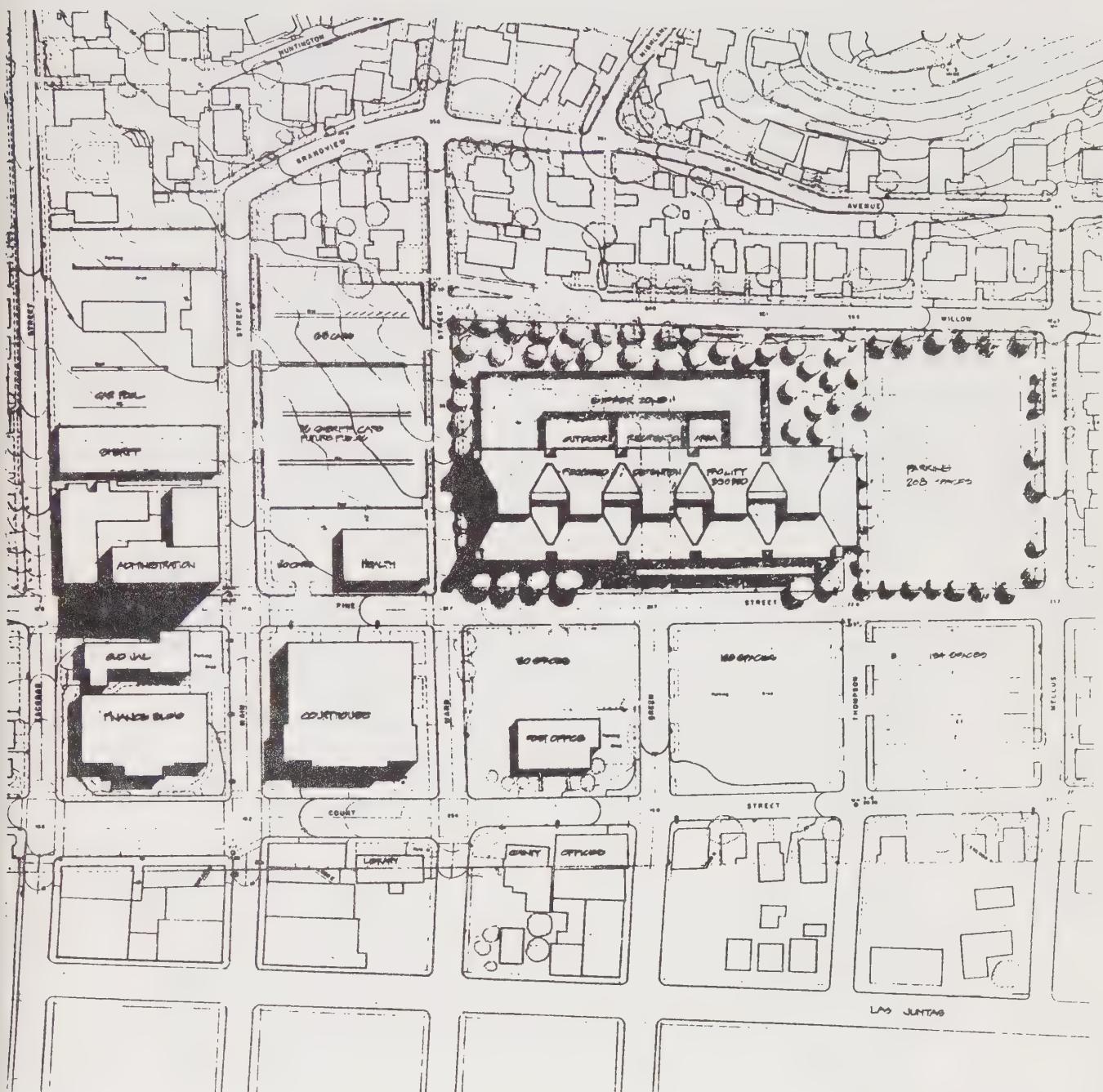


PARTING SUMMARY:			
OF STREET LOT	463	TOOL CHARGE	41
OF OTHER ADDED	990	TOOL CHARGE	875
NET CHARGE	135	TOTAL CHARGE	
ON STREET LOT	51	(EXCLUDING) HAD	
NET CHARGE	21	CASH FEE	

Alternate Footprint A

Contra Costa County Detention Facility Civic Center Site Studies

Figure 69



Alternate Footprint B

Contra Costa County Detention Facility
Civic Center Site Studies

The site contains 5.3 acres, and is thus large enough to satisfy the Detention Facility building's needs. Both Alternatives A and B are contiguous to existing Civic Center development, making access to other County agencies quite convenient. Perhaps the major concerns about Alternatives A and B are their proximity to residences on the eastern side of the Civic Center and location on a higher elevation in the Civic Center. Of the five alternatives, A and B would have the greatest visual impacts upon east side residences and would provide the least buffering between the facility and the residential area.

The use of Alternative A or B would minimize street closures within the Civic Center. It would necessitate the closure of Green and Thompson streets between Pine and Willow. Kaplan and McLaughlin found that of the four alternatives, Site 1 results in the least disruption of existing traffic flow and operation. An analysis of the traffic and parking impacts of the five alternatives was made by JHK and Associates. They found that Alternatives A and B would have little affect on circulation and access in the Civic Center, and that vehicle miles of travel does not vary significantly between project alternatives. With respect to parking, the five alternatives would have major impacts upon the parking supply in the Civic Center area. Overall, only Alternatives A, B and C were found to provide major relief to existing parking deficiencies, with Alternative B being the most beneficial of the three, and A the least favorable. With respect to congestion and delay, Alternatives A and B were found to generate the fewest problems, and were judged to have essentially the same impact as the no project alternative. In general, the findings of JHK and Associates indicate that Alternatives A and B would have the least impact of the five alternatives upon parking and traffic.

Noise and Air Quality Impacts of the five alternatives were evaluated by Earth Metrics Incorporated. They found that noise levels resulting from Alternatives A and B would be indistinguishable from those of the no project alternative, and would be only slightly increased over existing levels. In examining air quality impacts, Alternatives A and B were found to be indistinguishable from the "no project" alternative with respect to carbon monoxide, and generally result in lower daily emissions of other vehicle pollutants than the other alternatives.

Alternatives A and B were rejected primarily because of concern about their impact upon the neighboring hillside residential area. Local residents expressed opposition to these alternatives at public meetings and other forums.

b. ALTERNATIVE C

Alternative C utilizes a site which is bounded by Ward, Pine, Mellus, and Court Streets. It would require few street closings. Because of its location across Ward Street from the courthouse, Alternative C provides convenient access to Courts and related County Civic Center functions. This alternative would have the most spatial separation from the hillside neighborhood, but it is poorly buffered from residential and other uses along Court and Mellus Streets.

Because of the long and narrow nature of the site, only a long wall-like building is possible. Also, the facility would be very close to Pine and Court Streets, with only inadequate setbacks possible, thus making it very prominent and highly visible on the southern and western sides of the Civic Center. The site is so small that it does not provide space for courts expansion. This is a concern because of the desire to add additional courts at a later date. It also requires the removal of the Post Office. This would result in some delay because postal authorities have said that it would take one to one and one-half years for the County to acquire this federal property.

This alternative requires the closure of Green and Thompson Streets between Court and Pine, and also calls for the closure of Thompson between Pine and Willow. Resulting impacts upon circulation and access are greater than for Alternatives A and B, but less than for Alternatives D and E. Alternative C could provide major relief to the existing parking deficiency, by adding about 100 parking spaces in addition to those required to satisfy increased needs resulting from the project. Alternative C will affect traffic congestion and delay by shifting more traffic to Ward Street, and causing heavy vehicle and pedestrian traffic at the intersection of Ward and Pine.

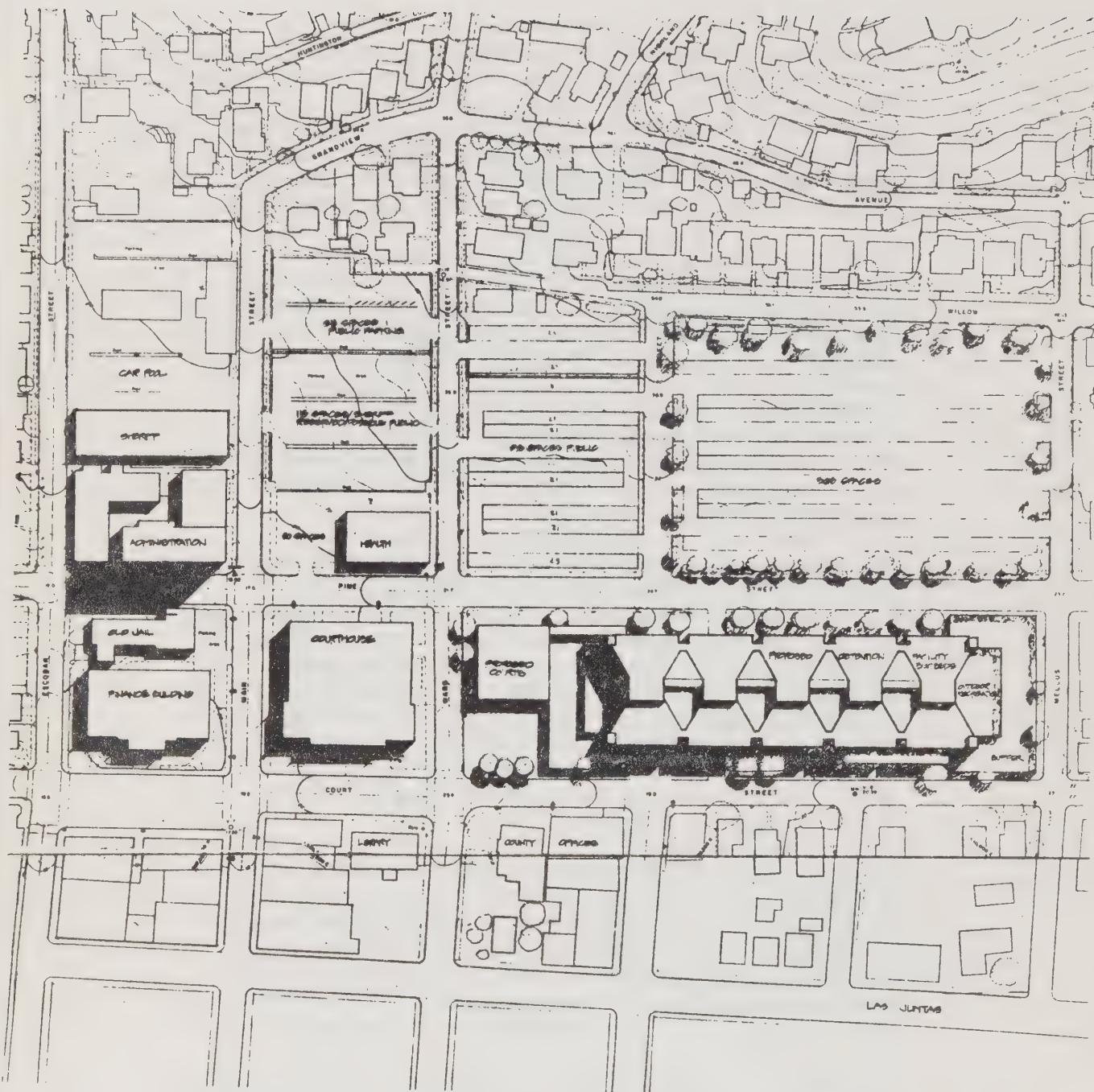
Noise and air quality impacts resulting from Alternative C are somewhat greater than those of Alternatives A and B. Noise levels along Pine and Ward Streets in the vicinity of the project will be increased. Air pollution levels will be increased in the same areas, and emissions will be somewhat higher than those resulting from either Alternatives A and B or the no project alternative.

Alternative C was rejected because Site 2 is too narrow to accommodate a suitable site for the kind of detention facility building that is being planned and to provide the setbacks from streets desirable for such a facility.

c. ALTERNATIVE D

Alternative D utilizes a 5.3 acre site bounded by Green, Willow, Ward and Court Streets. Pine Street is closed between Green and Mellus and diverted to Court Street and Thompson Street

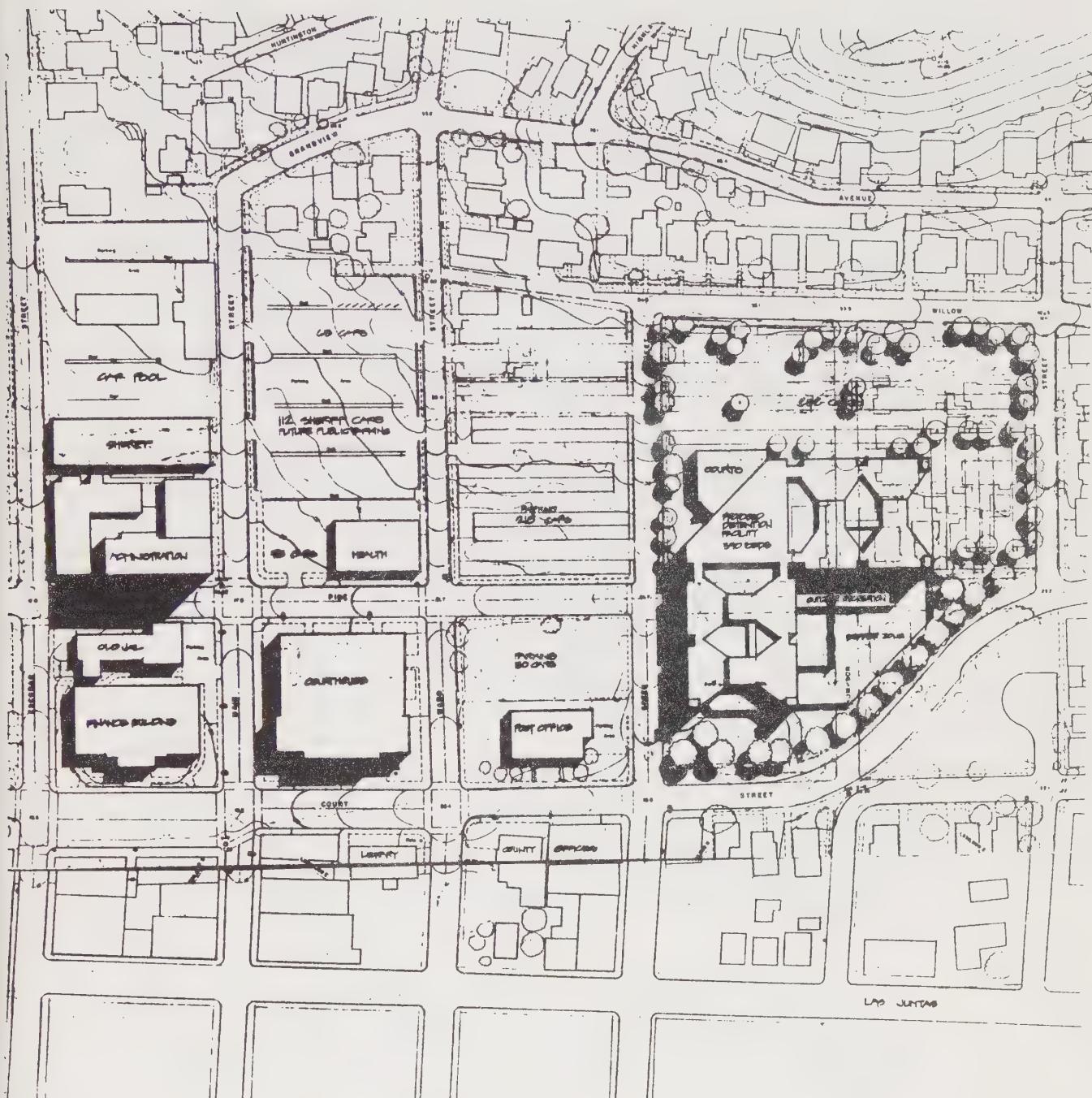
Figure 70



Alternate Footprint C

Contra Costa County Detention Facility Civic Center Site Studies

Figure 71



Alternate Footprint D Contra Costa County Detention Facility
Civic Center Site Studies

contaCos

County Detention Facility Civic Center Site Studies

PARKING SUMMARY		
ON STREET LOG	30	20
OFF STREET ACCORD	470	200
NET CHARGE	119	100
ON STREET LOG	161	100
ON STREET ACCORD	80	100
NET CHARGE	0	0
TOTAL CHARGE	-00	00

is closed between Court and Willow. This alternative provides the poorest access to other Civic Center functions because it leaves an entire street block between the existing built-up area and the new facility. The facility is well buffered from residential areas to the east and south, and to a lesser extent from those to the west. Thus concerns about impacts upon surrounding residences are minimized.

This alternative requires significant utility relocation. Although the closure of the east-west streets require minor utility relocations, costs and difficulty of relocation are not major. However, since Alternative D calls for the location of the facility directly in the current path of Pine Street, major utility work would be required, either through the bridging of the utilities by the facility, relocating them, or a combination of the two.

This Alternative has greater traffic and parking impacts than Alternatives A, B and C (see Circulation and Parking section of this report). The diversion of Pine Street into Court Street, which makes Court the major north-south thoroughfare through the Civic Center area, has a major impact upon circulation and access in the Civic Center area. Existing parking deficiencies would be alleviated only slightly by Alternative D, which would provide only about 30 parking spaces more than the number required to meet the increased demand resulting from the project. Congestion and delay would be greatest along Court Street, particularly at its intersection with Green, but this is not expected to be a major problem.

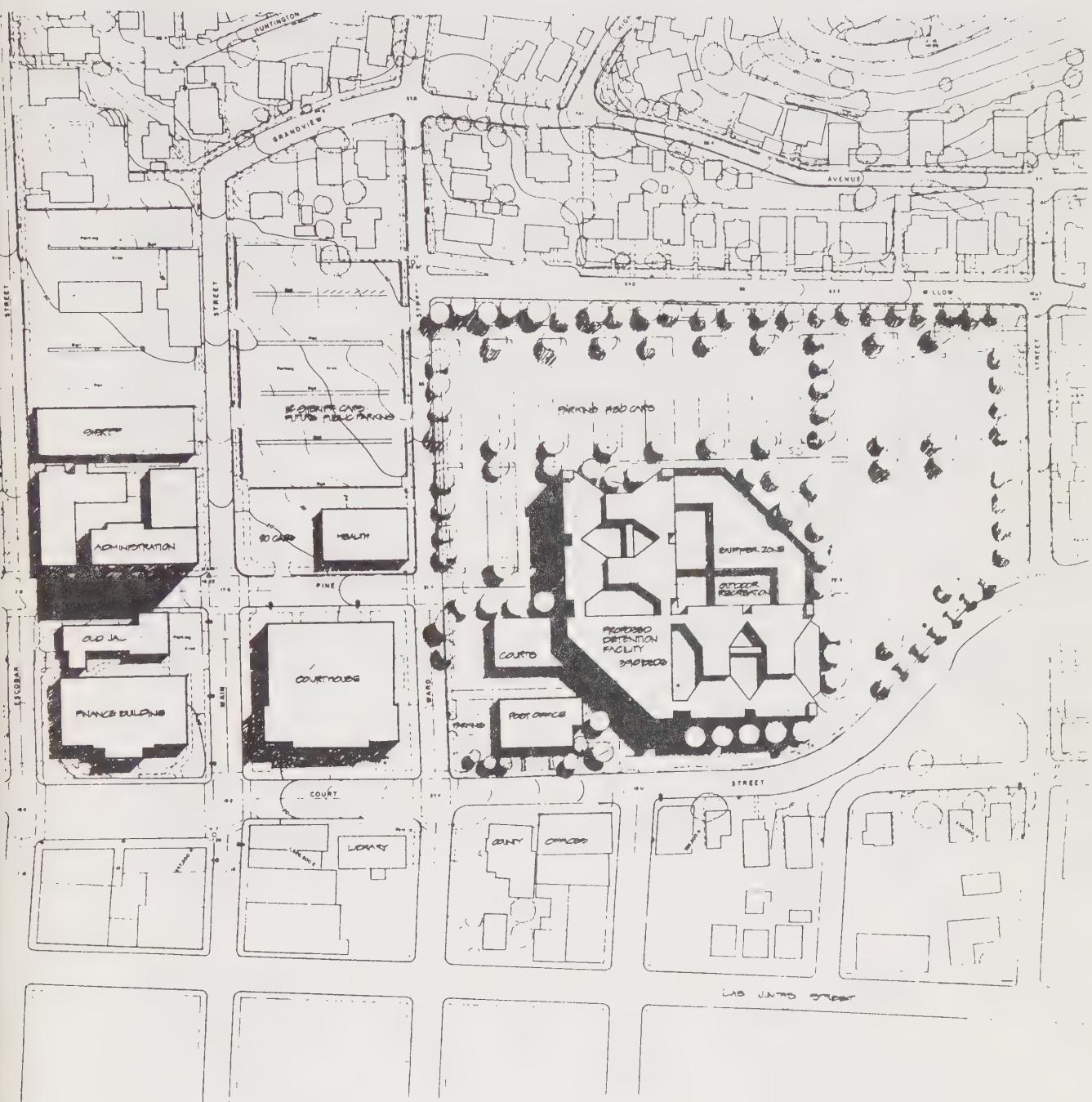
Alternative D causes a shift in noise and air pollution patterns because of the diversion of Pine Street. The major noise impact of the diversion would be an increase in noise levels on Court Street, particularly for several residences between Ward and Mellus Streets. Vehicle exhaust emission patterns would also shift, so that pollution concentrations would also be greatest along Court Street.

Alternative D was studied along with Alternative E following the Board of Supervisors' direction on November 9, 1976. But, it was superseded by a design closer to Alternative E because the latter provided a more flexible site and better proximity to existing and proposed court structures.

d. **ALTERNATIVE E (the proposed project)**

Alternative E utilizes the entire southern portion of the Civic Center as its project site. The site is a 7.5 acre area bounded by Ward, Willow, Mellus and Court Streets. This alternative requires the closure of Green and Thompson Streets between Court and

Figure 72



Alternate Footprint E

Contra Costa County Detention Facility
Civic Center Site Studies

1100 1101

Willow, and the closure of Pine between Ward and Mellus. Pine Street is diverted into Court Street at the southeastern corner of the Civic Center. This Alternative provides the largest gross site area and the most flexibility for locating the building and site features; and it has adequate expansion potential for future courts and convenient access to existing Civic Center facilities. Impacts upon surrounding residential areas are minimized by location of the facility away from residences to the east and south.

This alternative has the greatest impact upon local parking and traffic conditions. Circulation and access are affected by the closure of two east-west streets and by the diversion of Pine Street into Court Street. The major access route is shifted from the middle of the building complex (Pine Street) to its western edge (Court Street). This alternative provides the fewest number of parking spaces of the five alternatives. It provides a net gain of about 15 spaces beyond those needed to supply the increment of additional demand generated by the project. Alternative E also embodies the most congestion and delay potential of the five alternatives. The intersection of Court and Ward Streets will experience the largest vehicular volume, along with substantial pedestrian traffic, resulting in the potential for substantial congestion at periods of heavy use. In addition, there will be congestion and delay at the parking lot exits under this alternative. However, as the traffic and parking section notes, these impacts are manageable with conventional traffic control practices and installations.

Noise and air quality patterns for Alternative E parallel those of Alternative D. Concentrations of noise and vehicle exhaust emissions will be focussed upon Court Street. Vehicle emissions will be somewhat greater for this alternative, which results in slightly higher pollutant levels than the other alternatives.

4. CONCLUSION: FOOTPRINT ALTERNATIVES

Of the five alternatives, Alternative E was selected by the County. In accepting the design approval inherent in Alternative E, the participants, including community groups, staff, and the DFAC, recognized that it would have the most severe physical impacts of the several "foot-print" alternatives (except the similar Alternative D) because it would require the most physical changes to the project site, necessitate more site preparation activity, and result in more changes to established traffic patterns. Despite these physical impacts, Alternative E was selected because it offered the best combination of opportunities to accommodate the kind of building design that studies indicated would accomplish the project's criminal justice objectives, to locate the structure where it would minimize impacts to most adjoining land uses, to locate the structure where it could relate well to other County buildings and functions, and to provide a site that was amenable to an integrated site design providing landscaping, parking, and buffering.

E. The Relationship Between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity

The purpose of this discussion is to assess the project from the perspective that the present generation is the custodian of the environment for all succeeding generations. Construction of the Detention Facility represents a use of the local environment by the current generation. This use will affect long-term productivity, either by increasing or decreasing it in accordance with current, generally accepted measures of productivity.

The main effect that the proposed project will have on the relationship between short-term use of the environment and its long-term productivity is the re-use of the site for more intensive "urban" uses. The site was converted from rural to urban usage many decades ago, when it was developed for housing. More recently, much of it was cleared for redevelopment and was placed in parking and other forms of temporary urban uses. Now it is proposed that the site be committed to a new and more intensive kind of urban use, a large public building, which is expected to occupy it for many years. The project, then, represents a successive stage in the use of the site for urban land uses.

By committing the site for the Detention Facility, other uses and other public buildings are necessarily excluded from occupying the location. Since the Detention Facility is a public building, there is no market place or other comprehensive competitive system to clearly establish which use or uses might be best placed there at this time. Considering the site's location, adjacent to the Martinez central business district, it might also have been used for other public buildings, retail businesses or private offices, for apartments or other housing, or for a park. However, it would appear that the Detention Facility would rate high on any competitive system that considered the value of its services to the community. A detention facility has been the County government's highest priority major capital improvements project for over a decade, and the matter of its best location has been given considerable study as part of this project proposal as well as other studies in past years.

To the extent that the Detention Facility's major function, the incarceration of people for criminal justice, can be considered part of the future environment, long-term productivity will be affected by the Facility's impacts on crime and inmate behavior in Contra Costa County. It appears that the Detention Facility will enhance long-term productivity in this vein when compared to the existing facilities or the other project alternatives considered in this report.

The project would result in the continued location of the County's Detention Facility in proximity to related County agencies and services, including courts, the Public Defender, the District Attorney, the Sheriff, and the Probation Department. Because these functions of government inter-act with one another frequently, the aggregation is thought to operate more efficiently and make better use of space and resources than if the agencies were dispersed. Placement of the Detention Facility in the County Civic Center, therefore, increases its own productivity as well as that of the related governmental functions already located there.

The presence of the Detention Facility adjacent to other land uses will probably accelerate change or intensify the pressures for change in these areas. The rate and direction of change is uncertain. As is the case of the Detention Facility site itself, adjoining areas might be suitable for government, business, or housing. If changes or the capacity for change results in neighborhood deterioration, then there will be a negative effect on long-term productivity. If, however, change results in more efficient uses without neighborhood deterioration, long-term productivity will be enhanced.

The increments of energy and water consumption, and air, water and noise pollution resulting from the Detention Facility project will decrease long-term productivity.

F. Irreversible Environmental Changes Which Would Be Involved In The Proposed Action Should It Be Implemented

For the purpose of this section, impacts are considered irreversible if they result in permanent changes in the natural and social-cultural environments of the County Civic Center and adjoining areas in the City of Martinez. Also considered in this section are the changes that will remain for the life of the project but that can be reversed if the project facilities are removed and sufficient energy is expended to effect the reversal. Irreversible changes associated with the Detention Facility project are related to micro-climate, land use, visual resources, acoustic quality, public services and utilities, and energy consumption.

The major change in the physical environment that would result from project construction is the occupation of a six block site that now accommodates permanent and temporary parking, vacant lots, and a score of relatively small buildings, by a massive structure with its associated parking areas. The building will dominate its immediate surroundings for the foreseeable future as well as change the visual inter-relationships of the surrounding area.

A major change in the physical environment would result from the diversion of Pine Street to Court Street to create the project's large building site. The diversion would shift traffic, noise, and air pollutants now concentrated on Pine Street to Court Street, although the changes are not expected to be severe and may be mitigated to some extent. The street diversion would also change the visual characteristics of the County Civic Center as experienced from fixed locations and sequentially by motorists.

The proposed project will place additional (incremental) demands on public services and utilities. Especially significant is the anticipated consumption of energy to build the Detention Facility and to operate it. The project will also generate more run-off which must be accommodated in new drainage installations as well as natural drainage features.

Structural materials (wood, glass, steel, asphalt, concrete, etc.) in large but as yet unspecified amounts will be permanently committed to the project, and cannot be recovered to any appreciable extent when the project is torn down at some date in the future.

The proposed project will cause small but long-term changes in the micro-climate of the project area, including minor alterations in local wind speed and direction, site radiation, and moisture balances.

Through excavation and grading, the project will cause minor alterations in the already man-modified land forms of the site.

There will be increases in vehicular and pedestrian traffic on some streets and some addition to peak-hour traffic congestion in the Civic Center area.

G. Growth Inducing Impacts of the Proposed Action

This section is commonly provided in Environmental Impact Reports to highlight and discuss ways in which the proposed project, if built as planned, could foster economic or population growth, either directly or indirectly. In the case of the Detention Facility Project, however, all of the potentially growth-inducing impacts of the project have been identified in previous sections of the report, and none are thought to have the capabilities to cause direct and significant economic or population growth.

Still, it is instructive to mention several of the impacts with growth-inducing characteristics.

Direct growth-inducing impacts will be economic and temporary, because of the almost \$20 million which will be spent over a two-year period for the construction of the project. The construction manager has estimated that an average of 70 workers, exclusive of management service personnel, will be employed daily over the period of construction (with about 350 individuals working on the project at various times); these workers will receive about \$5.2 million in wages and salaries. Another \$9.2 million will be spent on construction materials or furnishings. These expenditures will almost certainly stimulate employment and sales within the County, and especially in Central County, during the construction period. However, it is not expected that appreciable numbers of people would establish primary residence in the County or that new business would be created as a result of the construction of the project.

Although the increased cost of operating the Detention Facility after construction is substantial, it is not considered to be significant in terms of its growth-inducing impacts on the surrounding area. The approximated 70 or so additional employees who would be required are expected to reside primarily in Central County. The increments in local purchases of materials, goods, and services for the Detention Facility, and by its employees, are expected to be beneficial but modest.

Indirect growth-inducing impact also will be economic in nature. It will result from the County being able to give attention to other capital projects after the Detention Facility construction is underway. Some of these will be related to the Detention Facility, such as a new facility (or facilities) to supplement the Detention Facility when it reaches capacity, and, possibly, additional parking facilities in the Civic Center. The scales, locations, designs, or times of construction for these projects are unknown at this writing (except for the additional courts which may adjoin the Detention Facility project's court structure).

Another indirect growth-inducing impact is the potential for land use change in the vicinity of the Detention Facility because of physical changes (e.g., law offices and bail services) that would result from the larger scale of operations of the proposed Facility. The nature and scale of this possible growth-inducing impact is largely unknown and depends a great deal on the future policies of the City of Martinez regarding growth and development in the areas adjacent to the County Civic Center.

H. Organizations and Persons Consulted; Documents Utilized

1. Organizations and Persons Consulted

a. Out of State

Federal Bureau of Prisoners; Allan Baar
National Clearinghouse for Criminal Justice; Planning and
Architecture, Steven Hesselschwerdt

b. State Offices

California Board of Corrections; Edgar Smith
California Bureau of Criminal Statistics; Max Wendel
California Department of Employment Development
California Department of Water Resources; Mr. Proctor

c. Regional Agencies

Association of Bay Area Governments (ABAG); Lu d'Silva
Bay Area Air Pollution Control District; Tom Golwin
Bay Conservation and Development Commission (BCDC); George Reed
East Bay Municipal Utility District (EBMUD); Mr. Simpson
East Bay Regional Parks District (EBRPD); Donald Harms
Metropolitan Transportation Commission (MTC); John McCallum
Pacific Gas & Electric Company (PG&E); Larry Hove, J. J. Sturgeon
Pacific Telephone and Telegraph Company (PT&T); Harold Rowe

d. Contra Costa County Agencies

Central Contra Costa Sanitary District; Gary Hostkotte, Jay McCoy
Contra Costa Consolidated Fire Protection District; Robert Frost,
Alan Nielsen
Contra Costa County Water District; John DiVito, Mr. Fredrickson,
Gordon Tornberg

e. Contra Costa County Departments

Administrator's Office; DeRoice Bell
Board of Supervisors
County Counsel's Office; Victor J. Westman
District Attorney's Office; Douglas L. Pipes
Health Department; Ted Gerow
Jury Commissioner/Superior Court Administrator; Wilfred J. O'Neill
Probation Department; Erline Hellekson
Public Defender's Office; Bruce Weiss
Public Works Department; Irene Bartlett, Roger Frost, John Harkin,
Douglas Healy, Bob Jackson, Paul Kilkenny, Howard Ray
Sheriff's Department; John Quartorolo

f. Cities

City of Martinez; Al Morris, Mr. Pease, Barry Whittaker

g. Project Consulting Firms

Approach Associates; Mark Morris
Donald Bentley and Associates, Consulting Engineers; Robert Voelz
Facility Sciences Corporation; Barry Baker, Ron Taylor
Kaplan and McLaughlin Architects-Planners; John Kiber, Herb
McLaughlin
Tudor Engineering; Jerry Plotner
Turner Construction Company; Frank Anderson

h. Private Companies

Martinez Sanitary Service; George Bissio
Shell Oil Company; Bill Harvey
Televents, Inc.; Mr. McNay, Mr. Shelby
Union Oil Company; Gary Lee

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I. Qualifications of EIR Preparation Agency

1. Background Report Chapter Preparation

Chapter 1 - Project Location, County Planning Department

Thomas J. Kirn, Planner

Chapter 2 - Project Description, County Public Works Department

Thomas M. Finley, Detention Facility Project Manager
Anthony Constantouros, Administrative Services Assistant

Chapter 3 - Project History, County Administrator's Office

Martin J. Nichols, Supervising Management Analyst

Chapter 4 - Detention Facility Standards, County Public Works Department

Louise P. Aiello, Administrative Intern

Chapter 5 - Inmate Capacity, County Planning Department

Harlan L. Menkin, Planning Specialist
Thomas J. Kirn, Planner

Chapter 6 - Project Alternatives, County Planning Department

Thomas J. Kirn, Planner
Charles A. Zahn, Planning Coordinator

Chapter 7 - Geology, Woodward-Clyde, Consultants

Charles L. Taylor, Senior Project Engineering Geologist
Kenneth D. Weaver, Senior Project Engineering Geologist

Chapter 8 - Biotic Resources, County Planning Department

Alice E. Bonner, Planner

Chapter 9 - Archaeological Evaluation, Foundation for Educational Development, Inc., California State College, Sonoma

Peter M. Banks, Staff Archaeologist
David A. Fredrickson, Professor of Anthropology

Chapter 10 - Historical Resources, County Planning Department

Alice Bonner, Planner
A. Charles Endom, Planning Graphics Supervisor

Chapter 11 - Hydrology, County Planning Department

Dale Sanders, Planning Ecologist

Chapter 12 - Water Quality, Earth Metrics, Inc.

C. Michael Hogan, President and Project Director
Patrick Ritter, Environmental Engineer

Chapter 13 - Air Quality, Earth Metrics, Inc.

Vivian Paparigian, Project Manager
C. Michael Hogan, President

Chapter 14 - Utilities, County Public Works Department

Alice Bonner, Planner
John W. Harkin, Associate Architectural Engineer

Chapter 15 - Energy, Interactive Resources, Inc.

Thomas K. Butt, President, Interactive Resources, Inc.

Chapter 16 - Traffic and Parking, J.H.K. Associates, Inc.

Benjamin H. Goff, Transportation Planner

Chapter 17 - Noise, Earth Metrics, Inc.

Vivian Paparigian, Project Manager
C. Michael Hogan, President

Chapter 18 - Existing Land Use, County Planning Department

Louise P. Aiello, Administrative Intern
Dennis C. Mesick, Planner II

Chapter 19 - Plans and Policies, County Planning Department

Charles A. Zahn, Planning Coordinator
Dennis C. Mesick, Planner II

Chapter 20 - Visual Analysis, Sedway-Cooke, Inc.

Sheila L. Brady, Associate Planner
Thomas A. Cooke, Principal In Charge

Chapter 21 - Social Impacts, County Planning Department

Thomas J. Kirn, Planner
Harlan L. Menkin, Planning Specialist

Chapter 22 - Economics, County Planning Department

Thomas J. Kirn, Planner
Harlan L. Menkin, Planning Specialist

Chapter 23 - Criminal Justice Facilities, County Planning Department

Thomas J. Kirn, Planner
George W. Johnson, Administrative Services Assistant III

Chapter 24 - Capital Improvements Policies, County Public Works Department

Ronald E. Morse, Administrative Services Officer II

Report Preparation - Contra Costa County Planning Department

Robert Koperski, Graphics Artist
Arthur Sprecher, Graphics Technician

2. Environmental Impact Report Preparation

a. County Detention Facility Environmental Impact Report Task Force
County Administrator's Office

Martin J. Nichols, Supervising Management Analyst

County Planning Department

Dale Sanders, Planning Ecologist
Charles A. Zahn, Planning Coordinator*

County Public Works Department

Thomas M. Finley, Detention Facility Project Manager

County Sheriff-Coroner's Office

Leslie A. Glenn, Administrative Services Officer

Criminal Justice Agency of Contra Costa County

George J. Roemer, Executive Director

(Liaison) City of Martinez

Barry Whittaker, Director of Planning

b. Draft Environmental Impact Report Preparation

Louise P. Aiello, Administrative Intern
Alice E. Bonner, Planner
Tom J. Kirn, Planner
Dale Sanders, Planning Ecologist (contact person)
Charles A. Zahn, Planning Coordinator

CONTRA COSTA COUNTY PLANNING DEPARTMENT

NOTICE OF

 Completion of Environmental Impact Report Negative Declaration of Environmental Significance

Lead Agency	Other Responsible Agency
Contra Costa County c/o Planning Department P.O. Box 951 Martinez, California 94553	Contra Costa County Public Works Dept. 6th Floor, Administration Bldg.
Phone (415) 372-2024	Martinez, California 94553
EIR Contact Person <u>Dale Sanders</u>	Phone <u>372-2101</u>
	Contact Person <u>Thomas Finley</u>

PROJECT DESCRIPTION: The proposed project is a new Contra Costa County Detention Facility. It is to be located in the County Civic Center in the City of Martinez. The project site is 7.5 acres bounded by Willow, Mellus, Court and Ward Streets. To assemble the site, six small blocks will be joined, several local street segments will be vacated, and a major thoroughfare (Pine Street) will be diverted one block to the west. Site development will include utility relocation, street closure and diversion, removal of approximately 20 existing structures, storm drain and permanent parking lot construction, and site landscaping. The Facility building will house 383 inmates and support functions in a four-story structure of about 186,000 square feet of floor space. A two-court complex will be constructed as a wing of the building. Nine housing modules will contain up to 49 single cells a piece. These modules will be in 2-story units. There is one large main courtyard, and each housing unit has a separate courtyard of approximately 1,200 square feet. The project, if approved, is estimated to be completed in 1979 and will cost approximately \$20 million.

It is determined from initial study by _____ of the Planning Department that this project does not have a significant effect on the environment.

Justification for negative declaration is attached.

The Environmental Impact Report is available for review at the below address:

Contra Costa County Planning Department
4th Floor, North Wing, Administration Bldg.
Pine & Escobar Streets
Martinez, California

Date Posted 2/25/77

Final date for review/appeal 4/5/77

By

Arnold B. Jones
Planning Department Representative

78 02841

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